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Standards of Performance for New Stationary Sources. Supplement No. 1 A Compilation as of March 15, 1977

PEDCo-Environmental Specialists, Inc, Cincinnati, Ohio

Prepared for

Environmental Protection Agency, Washington, D C Div of Stationary Source Enforcement

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March 1977

PB 271 993
Interim Report

SUPPLEMENT NO. 1
FOR
STANDARDS OF PERFORMANCE
FOR NEW STATIONARY SOURCES -

A COMPILATION AS OF MARCH 15, 1977

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement
Office of General Enforcement
Washington, D.C. 20460

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16 ABSTRACT

In this supplement for Standards of Performance for New Stationary Sources, revisions which have appeared in the Federal Register since the publication of the handbook on August 1, 1976 are presented. The full text of all revisions and other notices pertaining to the standards are included as well as the full text of all proposed amendments as of March 15, 1977.

17 KEY WORDS AND DOCUMENT ANALYSIS

a DESCRIPTORS	b IDENTIFIERS/OPEN ENDED TERMS	c COSATI Field/Group
Federal Emission Standards EPA Test Methods	New Source Performance Standards	13 B
Enforcement	Enforcement	14 D

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A COMPILATION AS OF MARCH 15, 1977

Prepared by

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Cincinnati, Ohio 45246

Contract No. 68-02-1375

EPA Project Officer: Kirk Foster

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement
Office of General Enforcement
Division of Stationary Source Enforcement
Washington, D.C. 20460

March 1977

PREFACE

This document reports revisions to the Standards of Performance for New Stationary Sources which have appeared in the Federal Register since the publication of the first Interim Report (EPA 340/1-76-009) on August 1, 1976. The set of revisions included in this supplement will update it through March 15, 1977.

Upon promulgation of the revised reference methods, proposed June 8, 1976, a new handbook will be printed in entirety. The format will be similar to the current handbook, but will be designed so that later revisions can be added to the compilation without it being redone.

SECTION III

SUMMARY OF STANDARDS AND REVISIONS

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Subpart DD - Grain Elevators	42 FR 2041, 1/13/77	(P)
	42 FR 13566, 3/11/77	(P)

Section	Revision	
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Test Method 15	41 FR 43866, 10/4/76	(P)
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SECTION IV

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OF
REVISIONS

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- as of March 15, 1977 -

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41.	41 FR 34620, 8/16/76 - Delegation of Authority to Virgin Islands.	148
42.	41 FR 35185, 8/20/76 - Revision to Emission Monitoring Requirements.	149
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43.	41 FR 36918, 9/1/76 - Standards of Performance - Availability of Information.	149
44.	41 FR 40107, 9/17/76 - Delegation of Authority to State of California.	149
45.	41 FR 40467, 9/20/76 - Delegation of Authority to State of Alabama.	150
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46.	41 FR 43148, 9/30/76 - Delegation of Authority to the State of Indiana.	150
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47.	41 FR 44859, 10/13/76 - Delegation of Authority to State of North Dakota.	150
	41 FR 46618, 10/22/76 - Advanced Notice of Proposed Rulemaking of Air Emission Regulations - Synthetic Organic Chemical Manufacturing Industry.	
	41 FR 47495, 10/29/76 - Proposed Standards of Performance for Kraft Pulp Mills; Correction.	

48. 41 FR 48342, 11/3/76 - Delegation of Authority to State of California. 161

41 FR 48706, 11/4/76 - Proposed Emission Guidelines for the Control of Sulfuric Acid Mist from Existing Sulfuric Acid Production Units.

49. 41 FR 51397, 11/22/76 - Amendments to Subpart D Promulgated. 161

41 FR 51621, 11/23/76 - Proposed Standards of Performance for Kraft Pulp Mills - Extension of Comment Period.

41 FR 52079, 11/26/76 - Proposed Emission Guidelines for the Control of Sulfuric Acid Mist from Existing Sulfuric Acid Production Units; Correction.

50. 41 FR 52299, 11/29/76 - Amendments to Reference Methods 13A and 13B Promulgated. 164

51. 41 FR 53017, 12/3/76 - Delegation of Authority to Pima County Health Department, Arizona. 165

52. 41 FR 54757, 12/15/76 - Delegation of Authority to State of California. 165

53. 41 FR 55531, 12/21/76 - Delegation of Authority to the State of Ohio. 166

41 FR 55792, 12/22/76 - Proposed Standards of Performance for Lignite-Fired Steam Generators.

54. 41 FR 56805, 12/30/76 - Delegation of Authority to the States of North Carolina, Nebraska, and Iowa. 166

55. 42 FR 1214, 1/6/77 - Delegation of Authority to State of Vermont. 167

42 FR 2841, 1/13/77 - Proposed Standards of Performance for Grain Elevators.

42 FR 2846, 1/13/77 - Addition to the List of Categories of Stationary Sources; Grain Elevators.

56. 42 FR 4124, 1/24/77 - Delegation of Authority to the State of South Carolina. 168

42 FR 4663, 1/26/77 - Proposed Standards for Sewage Sludge Incinerators.

42 FR 4883, 1/26/77 - Receipt of Application and Approval of Alternative Test Method. 168

42 FR 5121, 1/27/77 - Notice of Study to Review Standards for Fossil Fuel-Fired Steam Generators; SO_2 Emissions.

57. 42 FR 5936, 1/31/77 - Revisions to Emission Monitoring Requirements and to Reference Methods Promulgated. 159

58. 42 FR 6812, 2/4/77 - Delegation of Authority to City of Philadelphia. 161

42 FR 10019, 2/19/77 - Proposed Standards for Sewage Treatment Plants; Correction.

42 FR 12130, 3/2/77 - Proposed Standards of Performance for Iron & Steel Plants; Basic Oxygen Process Furnaces.

42 FR 13566, 3/11/77 - Proposed Standards of Performance for Grain Elevators; Extension of Comment Period.

40 Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

[FRL 591-1]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to State of California on Behalf of Madera County Air Pollution Control District

Pursuant to the delegation of authority for the standards of performance for new stationary sources (NSPS) to the State of California on behalf of the Madera County Air Pollution Control District, dated May 19, 1976, EPA is today amending 40 CFR 60.4 Address, to reflect this delegation. A Notice announcing this delegation is published in the Notices section of this issue of the Federal Register. Environmental Protection Agency [FRL 609-8] The amended § 60.4 is set forth below. It adds the address of the Madera County Air Pollution Control District, to which must be addressed all reports, requests, applications, submittals, and communications pursuant to this part by sources subject to the NSPS located within this Air Pollution Control District.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on May 19, 1976, and it serves no purpose to delay the technical change of this addition of the Air Pollution Control District address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of section 111 of the Clean Air Act, as amended (42 U.S.C. 1857c-6).

Dated: July 27, 1976.

Paul DeFalco,
Regional Administrator,
Region IX, EPA.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b) is amended by revising subparagraph (F) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(F) * * *

Bay Area Air Pollution Control District, 939 Ellis St., San Francisco, CA 94109

Del Norte County Air Pollution Control District, Courthouse, Crescent City, CA 95531

Fresno County Air Pollution Control District, 45 E. Tulare Avenue, Fresno, CA 93721

Humboldt Bay Air Pollution Control District, 5600 S. Broadway, Eureka, CA 95501

Kern County Air Pollution Control District, 1700 Flower St. (P.O. Box 997), Bakersfield, CA 93302

Madera County Air Pollution Control District, 135 W. Yosemite Avenue, Madera, CA 93637

Mendocino County Air Pollution Control District, County Courthouse, Ukiah, CA 95482

Monterey Bay Unified Air Pollution Control District, 420 Calle de Oro (P.O. Box 487), Salinas, CA 93901

Northern Sonoma County Air Pollution Control District, 3311 Chanate Rd., Santa Rosa, CA 95404

Northeastern Counties Air Pollution Control District, 2421 Oddstad Blvd., Redding, CA 96001

San Joaquin County Air Pollution Control District, 1601 E. Hazelton St. (P.O. Box 2009), Stockton, CA 95201

Trinity County Air Pollution Control District, Box AF, Weaverville, CA 96093

Ventura County Air Pollution Control District, 625 E. Santa Clara St., Ventura, CA 93001

* * * * *

[FR Doc 76-23165 Filed 8-6-76 8:45 am]

FEDERAL REGISTER, VOL. 41, NO. 154

MONDAY, AUGUST 9, 1976

41 Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 601-6]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to the U.S. Virgin Islands

Pursuant to the delegation of authority for the standards of performance for new stationary sources (NSPS) to the U.S. Virgin Islands on June 30, 1976, EPA is today amending 40 CFR 60.4 Address to reflect this delegation. A Notice announcing this delegation is published at page [illegible] of today's Federal Register. This amended § 60.4, which adds the address of the U.S. Virgin Islands Department of Conservation and Cultural Affairs, to which reports, requests, applications, submittals, and communications to the Administrator pursuant to this part must also be addressed, is set forth below.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on June 30, 1976, and it serves no purpose to delay the technical change of this addition of the U.S. Virgin Islands address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of section 111 of the Clean Air Act, as amended.

(42 U.S.C. 1857c-6)

Dated: August 4, 1976.

Charles M. Hansler,
Regional Administrator,
Region II.

1. In § 60.4 paragraph (b) is amended by revising subparagraph (CCCC) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(BBBB) * * *

(CCCC)—U.S. Virgin Islands: (U.S. Virgin Islands Department of Conservation and Cultural Affairs, P.O. Box 578, Charlotte Amalie, St. Thomas, U.S. Virgin Islands 00801)

[FR Doc 76-23238 Filed 8-13-76 8:45 am]

FEDERAL REGISTER, VOL. 41, NO. 159

MONDAY, AUGUST 16, 1976

42 [FRL 606-3]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Revision to Emission Monitoring Requirements

On October 6, 1975 (40 FR 46240), under section 111 of the Clean Air Act, as amended, the Environmental Protection Agency (EPA) promulgated regulations requiring continuous monitoring systems to be installed on certain new stationary sources and specifying performance testing methods to be used in part 60. The provisions of § 60.13(i) allow the Administrator to approve alternatives to monitoring requirements or procedures of requirements only upon application by an owner or operator of an affected facility. Monitoring equipment manufacturers would not be allowed to apply for approval of alternative monitoring equipment. Since EPA did not intend to prevent monitoring equipment manufacturers from applying for approval of alternative monitoring equipment, § 60.13(i) is being revised. As revised, any person will be allowed to make application to the Administrator for approval of alternative monitoring procedures or requirements.

This revision does not add new requirements, rather it provides greater flexibility for approval of alternative equipment and procedures. This revision is effective (date of publication).

(Sections 111, 114, and 301(a) of the Clean Air Act, as amended by sec. 4(a) of Pub. L. 91-604, 84 Stat. 1678 and by sec. 15(c)(1) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-6, 1857c-9, and 1857g(a)).)

Dated: August 19, 1976.

Russell E. Train,
Administrator.

In 40 CFR Part 60, Subpart A is amended as follows:

1. Section 60.13 is amended by revising paragraph (i) as follows:

§ 60.13 Monitoring requirements.

* * * * *

(i) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part by testing, but not limited to the following:

* * * * *

[FR Doc.76-24808 Filed 8-26-76;8:45 am]

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PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

1. By revising § 60.8 to read as follows:

§ 60.8 Availability of information.

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this Part shall be governed by Part 2 of this chapter. Information submitted voluntarily to the Administrator for the purposes of §§ 60.5 and 60.6 is governed by §§ 2.201 through 2.213 of this chapter and not by § 2.701 of this chapter.

44 Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 617-3]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to State of California on Behalf of Stanislaus County Air Pollution Control District; Delegation of Authority to State of California on Behalf of Sacramento County Air Pollution Control District; Correction

Pursuant to the delegation of authority for the standards of performance for new stationary sources (NSPS) to the State of California on behalf of the Stanislaus County Air Pollution Control District, dated July 2, 1976, EPA is today amending 40 CFR 60.4 *Address* to reflect this delegation. A notice announcing this delegation is published today at 41 FR 31930. The amended § 60.4 is set forth below. It adds the address of the Stanislaus County Air Pollution Control District, to which must be addressed all reports, requests, applications, submittals, and communications pursuant to this part by sources subject to the NSPS located within this Air Pollution Control District.

On July 9, 1976, EPA amended 40 CFR 60.4 *Address* to reflect delegation of authority for NSPS to the State of California on behalf of the Sacramento County Air Pollution Control District. By letter of July 30, 1976, Colin C. Greenlaw, APCO, Sacramento County Air Pollution Control District, notified EPA that the address published at 41 FR 27967 was incorrect. Therefore, EPA is today also amending 40 CFR 60.4, *Address* to reflect the correct address for the Sacramento County Air Pollution Control District.

This Administrator finds good cause for not giving prior public notice and for making this rule immediately effective because it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The determinations which are reflected by this administrative amendment were effective on July 9, 1976 and March 29, 1976, and it serves no purpose to delay the technical change of these additions of the Air Pollution Control Districts addressee in the Code of Federal Regulations.

This rulemaking is effective immediately and is issued under the authority of Section 111 of the Clean Air Act, as amended (42 U.S.C. 1857c-6).

Dated: September 8, 1976.

L. Russell Freeman,
Acting Regional Administrator,
Region IX, EPA.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b)(J) is revised to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(J) California:

Bay Area Air Pollution Control District, 939 Ellis St., San Francisco, CA 94109

Del Norte County Air Pollution Control District, Court Courthouse, Crescent City, CA 95531

Fresno County Air Pollution District District, 315 N. Fresno Avenue, Fresno, CA 93715

Humboldt County Air Pollution Control District, 1360 G Broadway, Eureka, CA 95501

Kern County Air Pollution Control District, 1700 Flower St. (P.O. Box 1071), Bakersfield, CA 93302

Madera County Air Pollution Control District, 135 W. Yosemite Avenue, Madera, CA 93637

Mendocino County Air Pollution Control District, County Courthouse, Ukiah, CA 95482

Monterey Bay Unified Air Pollution Control District, 420 Church St. (P.O. Box 1071), Salinas, CA 93901

Northern Sonoma County Air Pollution Control District, 3313 Chanate Rd., Santa Rosa, CA 95404

Sacramento County Air Pollution Control District, 9323 Kiefer Boulevard, Sacramento, CA 95827

San Joaquin County Air Pollution Control District, 1601 E. Hazelton Ave. (P.O. Box 2009), Stockton, CA 95201

Stanislaus County Air Pollution Control District, 820 Scenic Drive, Modesto, CA 95350

Trinity County Air Pollution Control District, Box 47, Weaverville, CA 96093

Ventura County Air Pollution Control District, 800 S. Santa Clara St., Ventura, CA 93001

[FR Doc.76-27118 Filed 9-16-76;8:45 am]

45 Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

[FRL 619-1]

SUBCHAPTER C—AIR PROGRAMS

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

PART 61—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Reports and Applications From Operators of New Source; Address Changes

DELEGATION OF AUTHORITY TO THE STATE OF ALABAMA

The amendments below institute certain address changes for reports and applications required from operators of new sources. EPA has delegated to the State of Alabama authority to review new and modified sources. The delegated authority includes the review under 40 CFR Part 60 for the standards of performance for new stationary sources and review under 40 CFR Part 61 for national emission standards for hazardous air pollutants.

A notice announcing the delegation of authority is published elsewhere in this issue of the FEDERAL REGISTER. These amendments provide that all reports, requests, applications, submittals, and communications previously required for the delegated reviews will now be sent instead to the Air Pollution Control Division, Alabama Air Pollution Control Commission, 645 South McDonough Street, Montgomery, Alabama 36104, instead of EPA's Region IV.

The Regional Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on August 9, 1976, and it serves no purpose to delay the technical change of this addition of the State address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of sections 111, 112, and 301 of the Clean Air Act, as amended (42 U.S.C. 1857, 1857c-5, 7, and 1857g).

Dated: September 9, 1976.

JACK E. LAVAN,
Regional Administrator.

Part 60 of Chapter I, Title 40, Code of Federal Regulations, is amended as follows:

1. In § 60.4, paragraph (b) is amended by revising subparagraph (B) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(B) State of Alabama, Air Pollution Control Division, Air Pollution Control Commission, 645 S. McDonough Street, Montgomery, Alabama 36104.

46 Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL [illegible]]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to the State of Indiana

Pursuant to the delegation of authority to implement the standards of performance for new stationary sources (NSPS) in the State of Indiana on April 21, 1976, EPA is today amending 40 CFR 60.4 Address, to reflect this delegation. A notice announcing this delegation is published [illegible] FEDERAL REGISTER, September 20, 1976 (41 FR [illegible]). The amended § 60.4 which adds the address of the Indiana Air Pollution Control Board to that list of addresses to which all reports, requests, applications, submittals, and communications to the Administrator pursuant to this part must be sent, is set forth below.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on April 21, 1976, and it serves no purpose to delay the technical change of this addition of the State address to the Code of Federal Regulations.

This rulemaking is effective immediately.

(Sec. 111 of the Clean Air Act, as amended, 42 U.S.C. 1857c-6.)

Dated: September 22, 1976.

Clarence H. Klassmann, Jr.,
Regional Administrator.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b) is amended by revising subparagraph (F) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(A)–(E) * * *

(F) State of Indiana, Indiana Air Pollution Control Board, 1330 West Michigan Street, Indianapolis, Indiana 46206.

* * * * *

[FR Doc. 76-28007 Filed 9-30-76; 8:45 am]

47 Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 619-8]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

PART 61—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Delegation of Authority to State of North Dakota

Pursuant to the delegation of authority for the standards of performance for new sources (NSPS) and notice of emission standards for hazardous air pollutants (NESHAPS) to the State of North Dakota on August 30, 1976, EPA is today amending respectively 40 CFR 60.4 and 61.04 Address, to reflect this delegation. A notice announcing this delegation is published today in the notices section. The amended §§ 60.4 and 61.04 which add the address of the North Dakota State Department of Health to which all reports, request, applications, submittals, and communications to the Administrator pursuant to these parts must also be addressed, are set forth below.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on August 30, 1976, and it serves no purpose to delay the technical change of this addition to the State address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of sections 111 and 112 of the Clean Air Act, as amended, (42 U.S.C. 1857c-6 and -7).

Dated: October 1, 1976.

John A. Green,
Regional Administrator.

Parts 60 and 61 of Chapter I, Title 40 of the Code of Federal Regulations are respectively amended as follows:

1. In § 60.4, paragraph (b) is amended by revising subparagraph (XX) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(A)–(W) * * *

(XX) State of North Dakota, State Department of Health, State Capitol, Bismarck, North Dakota 58501.

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Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 518-4]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to State of California on Behalf of Santa Barbara County Air Pollution Control District

Pursuant to the delegation of authority for the standards of performance for new stationary sources (NSPS) to the State of California on behalf of the Santa Barbara County Air Pollution Control District, dated September 17, 1975, EPA is today amending 40 CFR 60.4 Address to reflect this delegation. A Notice announcing this delegation is published in the Notices section of this issue of the Federal Register. The amended § 60.4 is set forth below. It adds the address of the Santa Barbara County Air Pollution Control District to which must be addressed all reports, requests, applications, submittals, and communications pursuant to this part by sources subject to the NSPS located within this Air Pollution Control District.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected this administrative amendment was effective on September 17, 1975 and it serves no purpose to delay the technical change of this addition of the Air Pollution Control District's address to the Code of Federal Regulations.

This rulemaking is effective immediately and is issued under the authority of section 111 of the Clean Air Act, as amended (42 U.S.C. 1857c-6).

Dated: October 30, 1975.

Paul De Falco, Jr.,
Regional Administrator,
EPA, Region IX.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b)(1) is amended by revising subparagraph F to read as follows:

§ 60.4 Address.

(b) * * *

(1) * * *

(A)–(E) * * *

(F) Environmental

Bay Area Air Pollution Control District, 939 Ellis St., San Francisco, CA 94109.

Del Norte County Air Pollution Control District, Courthouse, Crescent City, CA 95531.

Fresno County Air Pollution Control District, 515 S. Cedar Avenue, Fresno, CA 93702.

Humboldt County Air Pollution District, 208 E. Bridgeway, Eureka, CA 95501.

Kern County Air Pollution Control District, 1700 Flower St. (P.O. Box 997), Bakersfield, CA 93302.

Kings County Air Pollution Control District, 725 W. Kilgore Avenue, Hanford, CA 93230.

Mendocino County Air Pollution Control District, County Courthouse, Ukiah, CA 95482.

Monterey Bay Unified Air Pollution Control District, 420 Church St. (P.O. Box 487), Salinas, CA 93901.

Northern Sonoma County Air Pollution Control District, 3313 Chanate Rd., Santa Rosa, CA 95404.

Sacramento County Air Pollution Control District, 9323 Branch Center Road, Sacramento, CA 95827.

San Joaquin County Air Pollution Control District, 1601 E. Hazelton St. (P.O. Box 2009), Stockton, CA 95201.

Santa Barbara County Air Pollution Control District, 6362 Calle Real, Santa Barbara, CA 93111.

Shasta Lake County Air Pollution Control District, 500 Hemsted Drive, Redding, CA 96002.

Tehama County Air Pollution Control District, 1751 Walnut St., Red Bluff, CA 96080.

Tuolumne County Air Pollution Control District, 175 S. Stewart St., Sonora, CA 95370.

Ventura County Air Pollution Control District, 800 S. Santa Clara St., Ventura, CA 93001.

* * * * *

[FR Doc 75-29106 Filed 11-3-75;8:45 am]

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Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 518-3]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Amendments to Subpart D

Standards of performance for fossil fuel-fired steam generators of more than 73 megawatts (250 million Btu per hour) heat input rate are provided under subpart D of 40 CFR Part 60. Subpart D is amended herein to revise the application of the standards of performance for facilities burning wood residues in combination with fossil fuel.

Subpart D contains standards for particulate matter, sulfur dioxide, nitrogen oxides, and visible emissions from stated processes. These standards recognize that the use and/or ability to visible emissions are based on heat input. For sulfur dioxide, there are separate standards for liquid fossil fuel-fired and solid fossil fuel fired facilities with provisions for a separate standard when combinations of different fossil fuels are fired. There is no sulfur dioxide standard for gaseous fossil fuel-fired facilities since they emit negligible amounts of sulfur dioxide.

To date, there have been two ways for a source owner or operator to comply with the sulfur dioxide standard: (1) By firing low sulfur fossil fuels or (2) by using flue gas desulfurization systems. Complying with the standard by firing low sulfur fossil fuel requires an adequate supply of fuel with a sulfur content low enough to meet the standard. However, it could be possible for the owner or operator to fire, for example, a relatively high sulfur fossil fuel with a very low sulfur fossil fuel (e.g. natural gas) to obtain a fuel mixture which would meet the standard. The low sulfur fuel adds to the heat input but not to the sulfur dioxide emissions and thereby has an overall fuel sulfur reduction effect. In the past, the application of Subpart D prevented the heat content of fossil fuels but not wood residue to be used in determining compliance with the standards for particulate matter, sulfur dioxide and nitrogen oxides. The amendment made herein will allow the heat content of wood residue to be used for determining compliance with the standards. The amendment does not change the scope of applicability of Subpart D. All steam generating units constructed after August 17, 1971, and capable of firing fossil fuel at a heat input rate of more than 73 megawatts (250 million Btu per hour) are subject to Subpart D.

Rationale for the Amendments

Wood residue, which includes bark, sawdust, chips, etc., is not a fossil fuel and thus has not been allowed for use as a dilution agent in complying with the sulfur dioxide standard for steam generators. Several companies have requested that EPA revise Subpart D to permit blending of wood residue with high sulfur fossil fuels. This would enable them to obtain a fuel mixture low enough in sulfur to comply with the sulfur dioxide standard. Since Subpart D allows the blending of high and low sulfur fossil fuels, EPA has concluded that it is reasonable to extend application of this principle to wood residue which, although not a fossil fuel, does have low sulfur content.

Several companies have expressed interest in constructing steam generators which continuously fire wood residue in combination with fossil fuel. New facilities will comply with the standards for a cost than at present because they will be able to use wood residue, a relatively inexpensive source of energy, as an alternative to expensive low sulfur fossil fuels. Also, using wood residue as a fuel supplement instead of low sulfur fossil fuels will re-

sult in substantial savings in the consumption of scarce natural gas and oil resources, and will relieve what would otherwise be a substantial solid waste disposal problem. Consumption of energy and raw material resources will be reduced further by minimizing the need for flue gas desulfurization systems at new facilities. There will be no adverse environmental impact; neither sulfur dioxide nor nitrogen oxide emissions will increase as a result of this action. Considering the beneficial environmental, energy, and economic impacts, it is reasonable to permit wood residue to be fired as a low sulfur fuel to aid in compliance with the standards for fossil fuel-fired steam generators.

In making this amendment, EPA recognizes that affected facilities which burn substantially more wood residue than fossil fuel may have difficulty complying with the 43 nanogram per joule standard for particulate matter (0.1 pound per million Btu). There is not sufficient information available at this time to determine what level of particulate matter emissions is achievable. However, EPA is continuing to gather information on this question. If EPA determines that the particulate matter standard is not achievable, appropriate changes will be made to the standard. Any change would be proposed for public comment; however, in the interim, owners and operators will be subject to the 43 nanogram per joule standard.

"F" Factor Determination

New facilities firing wood residue in combination with fossil fuel will be subject to the emission and fuel monitoring requirements of § 60.45 (as revised on October 6, 1975, 40 FR 48300). The "F" factors listed in § 60.45(f)(4), which are used for converting continuous monitoring data and performance test data into units of the standard, presently apply only to fossil fuels. Therefore, "F" factors for bark and wood residue have been added to § 60.45(f)(4). Any owner or operator who elects to calculate his own "F" factor must obtain approval of the Administrator.

International System of Units

In accordance with the objective to implement national use of the metric system, EPA presents numerical values in both metric units and English units in its regulations and technical publications. In an effort to simplify use of the metric units of measurement, EPA now uses the International System of Units (SI) as set forth in a publication by the American Society for Testing and Materials entitled "Standard for Metric Practice" (Designation: E 380-76). The following amendments to Subpart D reflect the use of SI units.

Miscellaneous

Since these amendments are expected to have limited applicability, no environmental impact statement is required for this rulemaking pursuant to section 102 of the "Procedures for the Voluntary Preparation of Environmental Impact Statements" (50 FR 51418).

This action is effective on November 25, 1976. The Agency finds that good cause exists for not publishing this action as a notice of proposed rulemaking and for making it effective immediately upon publication because:

1. The action is expected to have limited applicability.

2. The action will remove an existing restriction on operations without increasing emissions and will have beneficial environmental, energy, and economic effects.

3. The action is not technically controversial and does not alter the overall substantive content of Subpart D.

4. Immediate effectiveness of the action will enable affected parties to proceed promptly and with certainty in conducting their affairs.

(Secs. 111, 114, and 301(a) of the Clean Air Act, as amended by section 4(a) of Pub. L. 91-604, 84 Stat. 1678 and by section 15(c)(2) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-6, 1857c-9, 1857g(a)).)

Date: November 15, 1976.

John Quarles,
Acting Administrator.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. Section 60.40 is amended by revising the designation of affected facility and by substituting the International System (SI) of Units as follows:

§ 60.40 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each fossil fuel-fired steam generating unit of more than 73 megawatts heat input rate (250 million Btu per hour).

(2) Each fossil fuel and wood residue-fired steam generating unit capable of firing fossil fuel at a heat input rate of more than 73 megawatts (250 million Btu per hour).

(3) Any change to an existing fossil fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels as defined in this subpart, shall not bring that unit under the applicability of this subpart.

2. Section 60.41 is amended by adding paragraphs (d) and (e) as follows:

§ 60.41 Definitions.

* * * * *

(d) "Fossil fuel and wood residue-fired steam generating unit" means a furnace or boiler used in the process of burning fossil fuel and wood residue for the purpose of producing steam by heat transfer.

(e) "Wood residue" means bark, sawdust, slabs, chips, shavings, mill trim, and other wood products derived from wood processing and forest management operations.

3. Section 60.42 is amended by revising paragraph (a)(1) and by substituting SI units in paragraph (a)(1) as follows:

§ 60.42 Standard for particulate matter.

(a) * * *

(1) Contain particulate matter in excess of 43 nanograms per joule heat input (0.10 lb per million Btu) derived from fossil fuel or fossil fuel and wood residue.

* * * * *

4. Section 60.43 is amended by revising paragraphs (a)(1) and (a)(2), by substituting SI units in paragraphs (a)(1) and (a)(2), and by revising the formula in paragraph (b) as follows:

§ 60.43 Standard for sulfur dioxide.

(a) * * *

(1) 340 nanograms per joule heat input (0.80 lb per million Btu) derived from liquid fossil fuel or liquid fossil fuel and wood residue.

(2) 520 nanograms per joule heat input (1.2 lb per million Btu) derived from solid fossil fuel or solid fossil fuel and wood residue.

(b) When different fossil fuels are burned simultaneously in any combination, the applicable standard (in ng/J) shall be determined by proration using the following formula:

$$PS_{sfd} = \frac{y(340) + z(520)}{y + z}$$

where:

PS_{sfd} is the prorated standard for sulfur dioxide when burning different fuels simultaneously, in nanograms per joule heat input derived from all fossil fuels and wood residue fired,

y is the percentage of total heat input derived from liquid fossil fuel, and

z is the percentage of total heat input derived from solid fossil fuel.

* * * * *

5. Section 60.44 is amended by revising paragraphs (a)(1), (c)(2), and (a)(3); by substituting SI units in paragraphs (a)(1), (a)(2), and (a)(3); and by revising paragraph (b) as follows:

§ 60.44 Standard for nitrogen oxides.

(a) * * *

(1) 86 nanograms per joule heat input (0.20 lb per million Btu) derived from gaseous fossil fuel or gaseous fossil fuel and wood residue.

(2) 130 nanograms per joule heat input (0.30 lb per million Btu) derived from liquid fossil fuel or liquid fossil fuel and wood residue.

(3) 300 nanograms per joule heat input (0.70 lb per million Btu) derived from solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25 percent, by weight, or more of coal refuse).

(b) When different fossil fuels are burned simultaneously in any combination, the applicable standards (in ng/J) shall be determined by proration. Compliance shall be determined by using the following formula:

$$P_{comb} = \frac{x(K_a) + y(K_b) + z(K_c)}{x + y + z}$$

where:

P_{comb} is the prorated constant for pollutant, P_a, P_b, or P_c, when burning different fuels simultaneously in any proportion (for multiple fuel burning, if any of the fuels burned do not have an applicable P factor, use the P factor for that fuel from all fossil fuels and wood residue listed),

x is the percentage of total heat input derived from gaseous fossil fuel,

y is the percentage of total heat input derived from liquid fossil fuel, and

z is the percentage of total heat input derived from solid fossil fuel (except for a solid fossil fuel containing 25 percent, by weight, or more of coal refuse).

When liquid or a solid fossil fuel containing 25 percent, by weight, or more of coal refuse is burned in combination with gaseous, liquid, other solid fossil fuel, or wood residue, the standard for nitrogen oxides does not apply.

§ Section 60.45 is amended by substituting SI units in paragraphs (b)(1)(i), (b)(2), (f)(4), (f)(4)(i), (f)(4)(ii), (g)(1)(i), (g)(1)(ii), (g)(2), and (g)(3)(i), by adding paragraphs (f)(4)(iii) and (f)(5)(iii), and by revising paragraph (f)(6) as follows:

§ 60.45 Emission and fuel monitoring.

(b) * * *

(1) * * *

(i) E = pollutant emissions, ng/J (lb/million Btu);

(2) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^{-5} M ng/dscm per ppm (2.59×10^{-7} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for sulfur dioxide and 46.01 for nitrogen oxides;

(g) * * *

(1) For anthracite coal as classified according to A.S.T.M. D 388-66, $P_a = 2.723 \times 10^{-7}$ dscm/J (10.140 dscf/million Btu) and $P_c = 0.532 \times 10^{-7}$ scm CO_2/J (1.980 scf CO_2/million Btu).

(ii) For subbituminous and bituminous coal as classified according to A.S.T.M. D 388-66, $P_a = 2.637 \times 10^{-7}$ dscm/J (9.820 dscf/million Btu) and $P_c = 0.486 \times 10^{-7}$ scm CO_2/J (1.810 scf CO_2/million Btu).

(iii) For liquid fossil fuel, including crude, residual, and distillate oils, $P = 2.476 \times 10^{-7}$ dscm/J (9.230 dscf/million Btu) and $P_c = 0.384$ scm CO_2/J (1.430 scf CO_2/million Btu).

(iv) For gaseous fossil fuels, $P = 2.347 \times 10^{-7}$ dscm/J (8.740 dscf/million Btu) for natural gas, propane, and butane fuels, $P = 2.478 \times 10^{-7}$ dscm CO_2/J (9.240 scf CO_2/million Btu) for natural gas, 2.540×10^{-7} dscm CO_2/J (9.460 scf CO_2/million Btu) for propane, and 2.425×10^{-7} dscm CO_2/J (9.030 scf CO_2/million Btu) for butane.

(v) For back $P = 1.818$ dscm/J (6.970 dscf/million Btu) and $P_c = 0.319$ dscm/J (1.187 dscf/million Btu). For wood residue other than bark $P = 1.836$ dscm/J (6.840 dscf/million Btu) and $P_c = 0.397$ dscm/J (1.463 dscf/million Btu).

(vi) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/million Btu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or a F_c factor (scm CO_2/J or scf CO_2/million Btu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section:

$$F = \frac{227.8(\%H) + 95.5(\%C) + 35.6(\%S) + 8.6(\%N) - 28.5(\%O)}{GCV}$$

(SI units)

$$F = \frac{[10^6][3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O)]}{GCV}$$

(English units)

$$F_c = \frac{20.0(\%C)}{GCV}$$

(SI units)

$$F_c = \frac{321 \times [10^6](\%C)}{GCV}$$

(English units)

(i) * * *

(ii) GCV is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted, determined by the A.S.T.M. test methods D 2015-66 (72) for solid fuels and D 1826-64 (76) for gaseous fuels as applicable.

(iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F_c value shall be subject to the Administrator's approval.

(5) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows:

$$F = \sum_{i=1}^{n} X_i F_i \text{ or } F_c = \sum_{i=1}^{n} X_i F_{ci}$$

where:

X_i = the fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.),

F_i or (F_{ci}) = the applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section,

n = the number of fuels being burned in combination.

§ Section 60.46 is amended by substituting SI units in paragraphs (b) and (f) and paragraph (g) is revised as follows:

§ 60.46 Test methods and procedures.

(b) For Method 6, Method 1 shall be used to select the sampling site and the number of traverse or sampling points. The sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the Administrator. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than 433 K (320 °F).

(f) For each run using the methods specified by paragraphs (a)(3), (a)(4), and (a)(5) of this section, the emissions expressed in ng/J (lb/million Btu) shall be determined by the following procedure:

$$E = CF \frac{20.9}{20.9 - \text{percent } O_2}$$

where:

(1) E = pollutant emission ng/J (lb/million Btu),

(2) C = pollutant concentration, ng/dscm (lb/dscf), determined by method 6,

(3) Percent O_2 = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated or grab sampling and analysis procedures of Method 3 as applicable.

The sample shall be obtained as follows:

(g) When combinations of fossil fuels or fossil fuel and wood residue are fired, the heat input, expressed in watts (Btu/hr), is determined during each testing period by multiplying the gross calorific value of each fuel fired (in J/kg or Btu/lb) by the rate of each fuel burned (in kg/sec or lb/hr). Gross calorific values are determined in accordance with A.S.T.M. methods D 2015-66 (72) (solid fuels), D 240-64 (76) (liquid fuels), or D 1826-64 (71) (gaseous fuels) as applicable. The method used to determine calorific value of wood residue must be approved by the Administrator. The owner or operator shall determine the rate of fuels burned during each testing period by suitable methods and shall confirm the

rate by a material balance over the steam generation system.

(Sections 111, 114, and 301(a) of the Clean Air Act as amended by section 4(a) of Pub. L. 91-604, 84 Stat. 1678 and by section 15(c)(2) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-5, 1857c-9 (a)(2) of the))

[FR Doc 76-34884 Filed 11-19-76 8:45 am]

50 Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

[FRL 640-5]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Amendments to Reference Methods 13A and 13B

On August 6, 1976 (40 FR 33151), the Environmental Protection Agency ("EPA") Promulgated Reference Methods 13A and 13B in Appendix A to 40 CFR Part 60. Methods 13A and 13B prescribe testing and analysis procedures for fluoride emissions from stationary sources. After promulgation of the methods, EPA continued to evaluate them and as a result has determined the need for certain amendments to improve the accuracy and precision of the methods.

Methods 13A and 13B require assembly of the fluoride sampling train so that the filter is located either between the third and fourth impingers or in an optional location between the probe and first impinger. They also specify that a fritted glass disc be used to support the filter. Since promulgation of the methods, EPA has found that when a glass frit filter support is used in the optional filter location, some of the fluoride sample is retained on the glass. Although no tests have been performed, it is believed that fluoride retention may also occur if a sintered metal frit filter support is used. However, in tests performed using a 30 mesh stainless steel screen as a filter support no fluoride retention was noted. Therefore, to eliminate the possibility of fluoride retention, sections 5.1.5 and 7.1.3 of Methods 13A and 13B are being revised to require the use of a 30 mesh stainless steel screen filter support if the filter is located between the probe and first impinger. If the filter is located in the normal position between the third and fourth impingers, the glass frit filter support may still be used.

In addition to the changes to sections 5.1.5 and 7.1.3, a few corrections are also being made. The amendments promulgated herein are effective on November 19, 1976. EPA finds that good cause exists for not publishing this action as a notice of proposed rulemaking and for making it effective immediately upon publication because:

1. This action is intended to improve the accuracy and precision of Methods 13A and 13B and does not alter the overall substantive content of the methods or the stringency of standards of performance for fluoride emissions.

2. The amended methods may be used immediately in source testing for fluoride emissions.

Dated: November 17, 1976.

John Quarles,
Acting Administrator.

In Part 60 of Chapter I, Title 40 of the Code of Federal Regulations, Appendix A is amended as follows:

1. Reference Method 13A is amended as follows:

(a) In section 3, the phrase "300 µg/liter" is corrected to read "300 mg/liter" and the parenthetical phrase "(see section 7.3.6)" is corrected to read "(see section 7.3.5)."

(b) Section 5.1.5 is revised to read as follows:

5.1.5 Filter holder. If located between the probe and first impinger, borosilicate glass with a 30 mesh stainless steel screen filter support and a silicone rubber gasket; neither a glass frit filter support nor a sintered metal filter support may be used. If the filter is in front of the impingers, a Pyrex glass filter holder with a glass frit filter support and a silicone rubber gasket is required. Other materials of construction may be used with approval from the Administrator, e.g., if probe liner is stainless steel, then filter holder may be stainless steel. The holder design shall provide a positive seal against leakage from the outside or around the filter.

(c) Section 7.1.3 is amended by revising the first two sentences of the sixth paragraph to read as follows:

7.1.3 Preparation of collection train. * * *

Assemble the train as shown in Figure 13A-1 with the filter between the third and fourth impingers. Alternatively, the filter may be placed between the probe and the first impinger if a 30 mesh stainless steel screen is used for the filter support. * * *

* * * * *

(d) In section 7.3.4, the reference in the first paragraph to "section 7.3.6" is corrected to read "section 7.3.5".

2. Reference Method 13B is amended as follows:

(a) In the third line of section 3, the phrase "300-g liter" is corrected to read "300 mg liter".

(b) Section 5.1.5 is revised to read as follows:

5.1.5 Filter holder. If located between the probe and first impinger, borosilicate glass with a 30 mesh stainless steel screen filter support and a silicone rubber gasket; neither a glass frit filter support nor a sintered metal filter support may be used if the filter is in front of the impingers. If located between the third and fourth impingers, borosilicate glass with a glass frit filter support and a silicone rubber gasket; other materials of construction may be used with approval from the Administrator, e.g., if probe liner is stainless steel, then filter holder may be stainless steel. The holder design shall provide a positive seal against leakage from the outside or around the filter.

(c) Section 7.1.3 is amended by revising the first two sentences of the sixth paragraph to read as follows:

7.1.3 Preparation of collection train. * * *

Assemble the train as shown in Figure 13A-1 (Method 13A) with the filter between the third and fourth impingers. Alternatively, the filter may be placed between the probe and the first impinger if a 30 mesh stainless steel screen is used for the filter support. * * *

* * * * *

(d) In section 7.3.4, the reference in the first paragraph to "section 7.3.6" is corrected to read "section 7.3.5".

(Secs. 111, 114, and 301(a) Clean Air Act as amended by sec. 4(a) of Pub. L. 91-604, 84 Stat. 1678 and by sec. 15(c)(2) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-5, 1857c-9 (a)(2) and 1857g(a)).)

[FR Doc 76-34885 Filed 11-19-76 8:45 am]

51

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 651-8]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to Pima County (Arizona) Department of Health on Behalf of Pima County Air Pollution Control District

Pursuant to the delegation of authority for the standards of performance for new stationary sources (NSPS), by the Pima County Health Department on behalf of the Pima County Air Pollution Control District, dated October 1, 1976, EPA is today amending 40 CFR 60.4 Address. to reflect this delegation. A the memorandum authorizing this delegation is published today at 41 FR in the Notices section of this issue. The amended § 60.4 is set forth below. It adds the address of the Pima County Air Pollution Control District to which must be addressed all reports, requests, applications, submittals, and communications pursuant to this part by sources subject to the NSPS located within this Air Pollution Control District.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected in this administrative amendment was effective on October 1, 1976 and it serves no purpose to delay the technical change on this addition of the Air Pollution Control District's address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of section 111 of the Clean Air Act, as amended (42 U.S.C. 1857c-6).

Dated: November 19, 1976.

R. L. O'Connell,
Acting Regional Administrator,
Environmental Protection Agency, Region IX.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b) is amended by adding subparagraph D to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(A) (D) * * *

D Arizona

Pima County Air Pollution Control District, 151 West Congress [illegible] Tucson, AZ 85701

* * * * *

[FR Doc 76-34552 Filed 12-8-76; 8:45 am]

52

[FRL 651-9]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to State of California on Behalf of San Diego County Air Pollution Control District

Pursuant to the delegation of authority for the standards of performance for new stationary sources (NSPS), to the State of California on behalf of the San Diego County Air Pollution Control District, dated November 8, 1976, EPA is today amending 40 CFR 60.4 Address. to reflect this delegation. A letter announcing this delegation is published in the Notices section of this issue, under EPA (FR Doc. 76-33830 at page 51198). The amended § 60.4 is set forth below. It adds the address of the San Diego County Air Pollution Control District, to which must be addressed all reports, requests, applications, submittals, and communications pursuant to this part by sources subject to the NSPS located within this Air Pollution Control District.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected in this administrative amendment was effective on November 8, 1976 and it serves no purpose to delay the technical change on this addition of the Air Pollution Control District's address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of section 111 of the Clean Air Act, as amended (42 U.S.C. 1857c-6).

Dated: November 26, 1976.

Burnis M. Fennimore,
Acting Regional Administrator,
Environmental Protection Agency, Region IX.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b) is amended by revising subparagraph P to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(A) (B) * * *

P California

Bay Area Air Pollution Control District, 939 Ellis Street, San Francisco, CA 94109.

Del Norte County Air Pollution Control District, Courthouse, Crescent City, CA 95531.

Fresno County Air Pollution Control District, 815 R. Custer Avenue, Fresno, CA 93706.

Humboldt County Air Pollution Control District, 5600 S. Broadway, Eureka, CA 95501.

Kern County Air Pollution Control District, 1700 Flower Street (P.O. Box 3071), Bakersfield, CA 93301.

Madera County Air Pollution Control District, 135 W. Yosemite Avenue, Madera, CA 93637.

Mendocino County Air Pollution Control District, County Courthouse, Ukiah, CA 95482.

Monterey Bay Unified Air Pollution Control District, 240 Church Street (P.O. Box 487), Salinas, CA 93901.

Northern Sonoma County Air Pollution Control District, 3313 Chanate Road, Santa Rosa, CA 95401.

Sacramento County Air Pollution Control District, 1411 Branch Center Road, Sacramento, CA 95827.

San Diego County Air Pollution Control District, 1257 Imperial Ave., San Diego, CA 92101.

San Joaquin County Air Pollution Control District, 1601 E. Hazelton Street (P.O. Box 2009), Stockton, CA 95201.

Santa Barbara County Air Pollution Control District, 1232 Santa Barbara, Santa Barbara, CA 93101.

Shasta County Air Pollution Control District, 1855 Placer St., Redding, CA 96001.

Tehama County Air Pollution Control District, Box A3, Red Bluff, CA 96080.

Tuolumne County Air Pollution Control District, 158 N. Washington, Sonora, CA 95370.

Ventura County Air Pollution Control District, 800 S. Victoria Avenue, Ventura, CA 93001.

[FR Doc 76-34553 Filed 12-8-76; 8:45 am]

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[FRL 66-6]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to the State of Ohio

Pursuant to the delegation of authority to implement the standards of performance for new stationary sources in the State of Ohio on August 4, 1975, EPA is today amending 40 CFR 60.4 Address to reflect this delegation. A notice announcing this delegation is published in the Notices section of this issue of the Federal Register. [FR Doc.] The amended § 60.4 is set forth below which adds the addresses of the Agencies in Ohio which assist the State in the delegated authority to that list of addresses to which all reports, requests, applications, submittals, and communications to the Administrator pursuant to this part must be sent.

The Administrator finds good cause for foregoing prior notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on August 4, 1976 and it serves no purpose to delay the technical change of this addition of the addresses to the Code of Federal Regulations.

This rulemaking is effective immediately and is issued under the authority of section 111 of the Clean Air Act, as amended

(42 U.S.C. 1857c-6)

Dated: December 10, 1976.

George R. Alexander, Jr.,
Regional Administrator.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b) is amended by revising subparagraph (xx) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(xx) Ohio:

Medina, Summit and Portage Counties, Director, Air Pollution Control, 177 North Broadway, Akron, Ohio 44308

Stark County, Director, Air Pollution Control, 1 Market Plaza, Canton, Ohio 44702

Butler, Clermont, Hamilton and Warren Counties, Superintendent, Division of Air Pollution Control, 2400 Beekman Street, Cincinnati, Ohio 45214

Cuyahoga County, Commissioner, Division of Air Pollution Control, Department of Public Health and Welfare, 5700 Broadway Ave., Cleveland, Ohio 44127

Lake County, Control Officer, Division of Air Pollution Control, 105 West 2nd Avenue, Painesville, Ohio 44077

Lorain County, Director, Department of Health, 200 West Erie Avenue, Lorain, Ohio 44052

Belmont, Carroll, Columbiana, Harrison, Jefferson and Mahoning Counties, Director, North East Ohio Air Quality Control Agency (NEOAQCA), 614 Adams, Post Office Building, Steubenville, Ohio 43952

Fairfield, Franklin, Licking, Madison, Pickaway and Union Counties, Director, Regional Air Pollution Control Agency (RAPCA), Montgomery County Health Department, 451 West Third Street, Dayton, Ohio 45422

Auglaize County and the City of Bowling Green (in Wood County), Director, Toledo Pollution Control Agency, 26 Main Street, Toledo, Ohio 43605

Adams, Brown, Lawrence and Scioto Counties, Engineer, Director, Air Pollution Control, Portsmouth City Health Department, 740 Second Street, Portsmouth, Ohio 45662

Ashland, Ashtabula, Crawford, Erie, Fairfield, Fulton, Hancock, Hardin, Henry, Huron, Knox, Logan, Marion, Medina, Mercer, Morrow, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Shelby, Van Wert, Williams, Wood (except City of Bowling Green), and Wyandot Counties, Ohio Environmental Protection Agency, Northwest District Office, 118 East Riverside Drive, Bowling Green, Ohio 43402

Ashtabula, Geauga, Lake, Mahoning, Trumbull and Wayne Counties, Ohio Environmental Protection Agency, Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087

Athens, Hocking, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pickaway, Ross, Vinton and Washington Counties, Ohio Environmental Protection Agency, Southeast District Office, Route 7, 9 Mile and Dupont Road, Marietta, Ohio 45750

Champaign, Clinton, Logan, and Shelby Counties, Ohio Environmental Protection Agency, Central District Office, 7 East Fourth Street, Dayton, Ohio 45402

Delaware, Fairfield, Fayette, Franklin, Licking, Madison, Pickaway, and Union Counties, Ohio Environmental Protection Agency, Central District Office, 208 East Broad Street, Columbus, Ohio 43215

[FR Doc. 76-37888 Filed 12-20-76; 8:45 am]

FEDERAL REGISTER, VOL. 41, NO. 246
TUESDAY, DECEMBER 21, 1976

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[FRL 665-1]

SUBCHAPTER C—AIR PROGRAMS

DELEGATION OF AUTHORITY—NEW SOURCE REVIEW

Delegation of Authority to the State of North Carolina

The amendments below institute certain additional changes for reports and applications required from operators of new sources. EPA has delegated to the State of North Carolina authority to review new and modified sources. The delegated authority includes the reviews under 40 CFR Part 52 for the prevention of significant deterioration. It also includes the reviews under 40 CFR Part 60 for the standards of performance for new stationary sources and reviews under 40 CFR Part 61 for national emission standards for hazardous air pollutants.

A notice announcing the delegation of authority is published elsewhere in this issue of the Federal Register. These amendments provide that all reports, requests, applications, submittals, and communications previously required for the delegated reviews will now be sent instead to the North Carolina Environmental Management Commission, Department of Natural and Economic Resources, Division of Environmental Management, P.O. Box 27687, Raleigh, North Carolina 27611. Attention: Air quality section instead of EPA's Region IV.

The Regional Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on November 24, 1976, and it serves no purpose to delay the technical change of this addition of the State address to the Code of Federal regulations.

This rulemaking is effective immediately, and is issued under the authority of Sections 101, 110, 111, 113, and 301 of the Clean Air Act, as amended, 42 U.S.C. 1857, 1857c-5, 6, 7, 8, and 1857g.

Dated: December 21, 1976.

John A. Little,
Deputy Regional Administrator.

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Part 60 of Chapter I, Title 40, Code of Federal Regulations, is amended as follows: In § 60.4, paragraph (b) is amended by revising subparagraph (xi) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(xi) [title] * * *

(11) North Carolina Environmental Management Commission, Department of Natural and Economic Resources, Division of Environmental Management, P.O. Box 27687, Raleigh, North Carolina 27611. Attention: Air quality section.

* * * * *

SUBCHAPTER C—AIR PROGRAMS

[FRL 665-3]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to State of Nebraska

Pursuant to the delegation of authority for the Standards of Performance for New Stationary Sources (NSPS), to the State of Nebraska on November 24, 1976, the Environmental Protection Agency (EPA) today is taking action to § 60.4 (Address) to reflect this delegation. A notice announcing this delegation is published elsewhere in this issue of the Federal Register. Effective immediately all requests, reports, applications, submittals, and other communications concerning the 13 source categories at the

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Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 808-1]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to State of Vermont

Pursuant to the delegation of authority for the Standards of Performance for New Stationary Sources (NSPS) to the State of Vermont on September 8, 1976, EPA is today amending 40 CFR 60.4, *Address*, to reflect this delegation. A notice announcing this delegation is published today in the FEDERAL REGISTER (see FR Doc. 77-340 appearing in the Notices section of this issue). The amended § 60.4, which gives the address of the Vermont Agency of Environmental Protection to which all reports, requests, applications, submittals, and communications to the Administrator pursuant to this part must also be addressed, is set forth below.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on September 8, 1976, and it serves no purpose to delay the technical change of this addition to the State address to the Code of Federal Regulations.

This rulemaking is effective immediately and is issued under the authority of Section 111 of the Clean Air Act, as amended (42 U.S.C. 1857c-6).

Dated: December 17, 1976.

JOHN A. S. MCGLENNON,
Regional Administrator.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b) is amended by revising subparagraph (VV) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(I) * * *

(VV) State of Vermont, Agency of Environmental Protection, Bldg. 103, Southeast Mental Health Complex, Waterbury, Vermont 05676.

* * * * *

[FR Doc 77-341 Filed 1-5-77;8:45 am]

[illegible] which were promulgated [illegible] 1971 and March 8, 1974 shall be sent to Nebraska Department of Environmental Control (DEC), P.O. Box 94653, State House Station, Lincoln, Nebraska 68509. However, reports required pursuant to 40 CFR 60.7(a) shall be sent to EPA, Region VII, 1735 Baltimore, Kansas City, Missouri 64108, as well as to the State.

The Regional Administrator finds good cause for foregoing prior public notice and making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. This delegation, which is reflected by this administrative amendment, was effective on November 28, 1975, and it serves no purpose to delay the technical change of this addition of the State address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of Section 111 of the Clean Air Act, as amended.

(42 U.S.C. 1857c-6.)

Dated: December 20, 1976.

JEROME H. SVORE,
Regional Administrator.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b) is amended by revising subparagraph (CC) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(A)–(BB) * * *

(CC) Nebraska Department of Environmental Control, P.O. Box 94653, State House Station, Lincoln, Nebraska 68509.

* * * * *

[FR Doc 76-36834 Filed 12-30-76;8:45 am]

[FRL 804-6]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to the State of Iowa

Pursuant to the delegation of authority for New Source Performance Standards (NSPS) to the State of Iowa on June 8, 1975, the Environmental Protection Agency is today amending 40 CFR 60.4, *Address*, to reflect this delegation. A notice announcing this delegation is published (December 30, 1976), in the FEDERAL REGISTER.

The amended § 60.4 provides that all reports, requests, applications, submittals, and other communications required for the 11 source categories of the NSPS, which were delegated to the State, shall be sent to the Iowa Department of Environmental Quality (DEQ), 3920 Delaware Avenue, P.O. Box 3326, Des Moines, Iowa 50316. However, reports required pursuant to 40 CFR 60.7(a) shall be sent to EPA, Region VII, 1735 Baltimore, Kansas City, Missouri 64108, as well as to the State.

The Regional Administrator finds good cause for foregoing prior public notice and makes this rulemaking effective immediately in that it is an administrative change and not one of substantive content. The delegation was effective June 8, 1975, and it serves no purpose to delay the technical change of the addition of the State address to the Code of Federal Regulations.

This rulemaking is effective immediately and is issued under the authority of Section 111 of the Clean Air Act, as amended.

(42 U.S.C. 1857c-6.)

Dated: December 20, 1976.

JEROME H. SVORE,
Regional Administrator.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4 paragraph (b) is amended by revising subparagraph (Q) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(A)–(P) * * *

(Q) State of Iowa, Department of Environmental Quality, 3920 Delaware, P.O. Box 3326, Des Moines, Iowa 50316.

* * * * *

[FR Doc 76-36833 Filed 12-30-76;8:45 am]

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 674-6]

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

NEW SOURCE REVIEW

Delegation of Authority to the State of South Carolina

The amendments below institute certain address changes for reports and applications required from operators of new sources. EPA has delegated to the State of South Carolina authority to review new and modified sources. The delegated authority includes the reviews under 40 CFR Part 52 for the prevention of significant deterioration. It also includes the review under 40 CFR Part 60 for the standards of performance for new stationary sources and review under 40 CFR Part 61 for national emission standards for hazardous air pollutants.

A notice announcing the delegation of authority is published elsewhere in the notices section of this issue of the Federal Register. These amendments provide that all reports, requests, notifications, submittals, and communications previously required for the delegated reviews will now be sent to the Office of Environmental Quality Control, Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201 instead of EPA's Region IV.

The Regional Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this administrative amendment was effective on October 18, and it serves no purpose to delay the technical change of this addition of the State address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of sections 101, 110, 111, 113, and 301 of the Clean Air Act, as amended, 42 U.S.C. 1857c-5, 6, 7 and 1857g.

Dated: January 11, 1977.

John A. Little,
Acting Regional Administrator.

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to the State of South Carolina

2. Part 60 of Chapter I, Title 40, Code of Federal Regulations, is amended by revising subparagraph (nn) of § 60.64(b) to read as follows:

§ 60.64 Address.

* * * * *

(b) * * *

(A) [Reg.] * * *

(nn) State of South Carolina, Office of Environmental Quality Control, Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201

PESTICIDES

ENVIRONMENTAL PROTECTION AGENCY

[FRL 675-1]

AIR PROGRAMS—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Receipt of Application and Approval of Alternative Performance Test Method

On January 28, 1976 (41 FR 4332), the Environmental Protection Agency (EPA) promulgated standards of performance for new primary aluminum reduction plants under 40 CFR Part 60. The standards limit air emissions of gaseous and particulate fluorides from new and modified primary aluminum reduction plants. The owners or operators of affected facilities are required to demonstrate compliance with these standards by conducting a performance test as specified in Appendix A—Reference Methods—Method 13A or 13B, "Determination of Total Fluoride Emissions from Stationary Sources," published in the Federal Register August 6, 1975 (40 FR 33154). As provided in 40 CFR 60.8(b)(2) and (3), the Administrator may approve the use of an equivalent test method or may approve the use of an alternative method if the method has been shown to be adequate for the determination of compliance with the standard. Method 13A specified that total fluorides be determined by the SPADNS zirconium lake colorimetric method, and Method 13B specified that this determination be made by the specific ion electrode method.

On September 3, 1976, EPA received written application for approval of equivalent or an alternative technique from Kaiser Aluminum and Chemical Corporation, Oakland, California. Specifically, the application requested approval of ASTM Method D 3270-73T, "Tentative Method of Analysis for Fluoride Content of the Atmosphere and Plant Tissues," 1974 Annual Book of ASTM Standards—Part 29.

Precise guidelines for the determination of method equivalence have not been established by EPA. However, EPA has completed a technical review of the application and has determined that the ASTM method will produce results adequate for the determination of compliance with the standards of performance for new primary aluminum plants. Therefore, EPA approves the ASTM method as an alternative to the analytical procedures specified in paragraph 7.3 "Analysis" of Method 13A or 13B for aluminum plants, pursuant to 40 CFR 60.8(b)(3).

Dated: January 18, 1977.

Roger Strelow,
Assistant Administrator for Air and Waste Management.

[FR Doc. 77-2385 Filed 1-25-77; 8:45 am]

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Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

[FRL 660-4]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Revisions to Emission Monitoring Requirements and to Reference Methods

On October 6, 1975, (40 FR 46250), under sections 111, 114, and 301 of the Clean Air Act, as amended, the Environmental Protection Agency (EPA) promulgated emission monitoring requirements and revisions to the performance testing Reference Methods, in 40 CFR Part 60. Since that time, EPA has determined that there is a need for a number of revisions to clarify the requirements. Each of the revisions being made to 40 CFR Part 60 are discussed as follows:

1. *Section 60.13.* Paragraph (e)(2) has been rewritten to clarify that not only new monitoring systems but also upgraded monitoring systems must comply with applicable performance specifications.

Paragraph (e)(4) is revised to provide that data recording is not required more frequently than once every six minutes (rather than the previously required ten seconds) for continuous monitoring systems measuring the opacity of emissions. Since reports of excess emissions are based upon hours of six-minute averages, more frequent data recording is not required in order to satisfy these monitoring requirements.

2. *Section 60.45.* Paragraphs (a) through (c) have been reorganized for clarification. In addition, restrictions on use of continuous monitoring systems for measuring oxygen on a wet basis have been removed. Prior to this revision, only dry basis oxygen monitoring equipment was acceptable. Provisions for use of wet basis oxygen monitoring equipment have been approved by EPA and were published in the FEDERAL REGISTER as an alternative procedure (41 FR 44948).

Also deleted from § 60.45 are restrictions on the location of a carbon dioxide (CO2) continuous monitoring system downstream of wet scrubber flue gas desulfurization equipment. At the time the regulations were promulgated (October 6, 1975), EPA assumed that lime/stone scrubbers were [illegible] under conditions that [illegible] significant positive bias in the [illegible] CO2 by the scrubbing [illegible] would cause error in [illegible] results. EPA investigated [illegible] problem and concluded [illegible] or limestone scrubbers [illegible] conditions of operation on a [illegible] after the reheat section. CO2 in the flue gas and cannot [illegible] significant errors into the monitoring result. Lime scrubbers typically [illegible] a pH level between 7 and 8 which will maximize SO2 absorption and minimize CO2 absorption. Thus, the effect of CO2 [illegible] on the emission results is expected to be minimal. The exact amount of CO2 [illegible], if any, during the scrubber operation has not been determined since it is dependent upon the operating conditions for a particular facility. Although each percent of CO2 absorption will result in a positive bias of 11 percent (at a stack concentration of 14 percent CO2) in the final emission results, the indicated results may be higher than actual stack concentrations. The actual bias is expected to be very small since the amount of CO2 absorption will be much less than one percent.

In flue gases from limestone scrubbers, there exists a possibility of the addition of CO2 from the scrubbing reaction to the CO2 from the fuel combustion. Every two molecules of SO2 reacting with the limestone will produce a molecule of CO2. Limestone scrubbers are typically operated at an approximate temperature of 50° C under acidic conditions. At these operating conditions the amount of CO2 generated in a 90 percent efficiency scrubber is 1500 ppm or 0.15% percent CO2. This will introduce a negative bias of 1 to 1.5 percent for a CO2 level of 8 to 15 percent. This amount of potential error compares favorably with systems previously approved. Therefore, EPA is removing the restriction which limited the installation of carbon dioxide continuous monitoring systems to a location upstream of the scrubber.

Several other revisions are being made to paragraphs (a), (b), (c), and (e) of Subpart D which improve the clarity or further define the intent of the regulations. Paragraph (d) has been reserved for later addition of fuel monitoring provisions.

3. *Performance Specification 1.* Paragraph 6.3 has been rewritten to clarify requirements that must be met by continuous opacity monitor manufacturers. Manufacturers must certify that at least one analyzer from each month's production was tested and meets all applicable requirements. If any requirements are not met, the production for the month must be resampled according to military standard (MIL-STD-105D) and retested. Previously, the regulation required that each unit of production had to be tested. Copies of MIL-STD-105D may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

4. *Performance Specification 2.* Figure 2-3 of Performance Specification 2 has been corrected to properly define the term "mean differences." The corrections in the operations now conform with the statistical definitions of the specifications.

5. *General.* These amendments provide optional monitoring procedures that may be selected by an owner or operator of a facility affected by the monitoring requirements of 40 CFR Part 60. Certain editorial clarifications are also included. Proposal of these amendments is not necessary because they are either interpretative in nature or concern minor changes in instrumentation testing and data recording or allow a wider selection of equipment to be used. These changes will have no effect on the number of emission sources that must be monitored or the quality of the resultant emission data. The changes are consistent with recent determinations of the Administrator with respect to use of alternative continuous monitoring systems.

6. *Effective date.* These revisions become effective March 9, 1977.

[illegible] 111, 114, and 301(a) of the Clean Air Act, as amended, Pub. L. 91-604, 84 Stat. 1676 (42 U.S.C. 1857c-6, 1857c-9, 1857g(a)).

Dated: January 19, 1977.

Jones Sprunger,
Acting Administrator.

It is CFR Part 60 Subpart A, Subpart D, and Appendix B are amended as follows:

Subpart A—General Provisions

1. Section 60.13 is amended by revising paragraphs (e)(2) and (e)(4) as follows:

§ 60.13 Monitoring requirements.

* * * * *

(e) * * *

(2) All continuous monitoring systems referenced by paragraph (e)(1) of this section shall be upgraded or replaced (if necessary) with new continuous monitoring systems, and the new or improved systems shall be demonstrated to comply with applicable performance specifications under paragraph (e)(1) of this section on or before September 11, 1979.

* * * * *

(4) All continuous monitoring systems referenced by paragraphs (e)(1) and (e)(2) of this section for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive ten-second period and one cycle of data recording for each successive six-minute period.

* * * * *

Subpart D—Standards of Performance for Fossil-Fuel Fired Steam Generators

2. Section 60.45 is amended by revising paragraphs (a), (b), (c), and (e) and by reserving paragraph (d) as follows:

§ 60.45 Emission and fuel monitoring.

(a) Each owner or operator shall install, calibrate, maintain, and operate continuous monitoring systems for measuring the opacity of emissions, sulfur dioxide emissions, diluent (either oxygen or carbon dioxide) except as provided in paragraph (b) of this section.

(b) Certain of the continuous monitoring system requirements under paragraph (a) of this section do not apply to owners or operators under the following conditions:

(1) For a fossil-fuel-fired steam generator that burns only gaseous fossil fuel, continuous monitoring systems for measuring the opacity of emissions and sulfur dioxide emissions are not required.

(3) For a fossil fuel-fired steam generator that does not use a flue gas desulfurization device, a continuous monitoring system for measuring sulfur dioxide emissions is not required if the owner or operator monitors sulfur dioxide emissions by fuel sampling and analysis under paragraph (d) of this section.

(4) Notwithstanding § 60.13(b), installation of a continuous monitoring system for nitrogen oxides may be delayed until after the initial performance tests under § 60.8 have been conducted. If the owner or operator demonstrates during the performance test that emissions of nitrogen oxides are less than 75 percent of the applicable standards in § 60.44, a continuous monitoring system for measuring nitrogen oxides emissions is not required. If the initial performance test results show that nitrogen oxide emissions are greater than 75 percent of the applicable standard, the owner or operator shall install a continuous monitoring system for nitrogen oxides within one year after the date of the initial performance tests under § 60.8 and comply with all other applicable monitoring requirements under this part.

(5) If an owner or operator does not install any continuous monitoring systems for sulfur oxides and nitrogen oxides, as provided under paragraphs (b)(1) and (b)(3) of paragraphs (b)(2) and (b)(4) of this section, a continuous monitoring system for measuring either oxygen or carbon dioxide is not required.

(c) For performance evaluations under § 60.13(c) and calibration checks under § 60.13(d), the following procedures shall be used.

(1) Reference Methods 6 or 7, as applicable, shall be used for conducting performance evaluations of sulfur dioxide and nitrogen oxides continuous monitoring systems.

(2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of Appendix B to this part.

(3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent and for a continuous monitoring system measuring sulfur oxides or nitrogen oxides, the span value shall be determined as follows:

(In parts per million)

Fossil fuel	Span value for sulfur dioxide	Span value for nitrogen oxides
Gas	(1)	(2)
Liquid	1,000	500
Solid	1,500	1,000
Combinations	[1,000(y) + 1,500(z)]	[500(y) + 1,000(z)] + 1,000(x)

(1) Not applicable.

where:

x = the fraction of total heat input derived from gaseous fossil fuel,

y = the fraction of total heat input derived from liquid fossil fuel, and

z = the fraction of total heat input derived from solid fossil fuel.

(4) All span values computed under paragraph (c)(3) of this section for burning combinations of fossil fuels shall be rounded to the nearest 500 ppm.

(5) For a fossil fuel-fired steam generator that simultaneously burns fossil fuel and nonfossil fuel, the span value of all continuous monitoring systems shall be subject to the Administrator's approval.

(d) [Reserved]

(e) For any continuous monitoring system installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/million Btu).

(1) When a continuous monitoring system for measuring oxygen is selected, the measurement of the pollutant concentration and oxygen concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = CF\left[\frac{20.9}{20.9 - \text{percent } O_2}\right]$$

where:

E, C, F, and %O are determined under paragraph (f) of this section.

(2) When a continuous monitoring system for measuring carbon dioxide is selected, the measurement of the pollutant concentration and carbon dioxide concentration shall each be on a consistent basis (wet or dry); and the following conversion procedure shall be used:

$$E = CF_c\left[\frac{100}{\text{percent } CO_2}\right]$$

where:

E, C, F_c, and %CO are determined under paragraph (f) of this section.

(f) All span values computed under paragraph (e)(1) or (2) of this section for burning combinations of fossil fuels shall be rounded to the nearest 500 ppm.

(g) [Reserved]

(h) For any continuous monitoring system installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/million Btu).

(1) When a continuous monitoring system for measuring oxygen is selected, the measurement of the pollutant concentration and oxygen concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = CF\left[\frac{20.9}{20.9 - \text{percent } O_2}\right]$$

where:

E, C, F, and %O are determined under paragraph (f) of this section.

(2) When a continuous monitoring system for measuring carbon dioxide is selected, the measurement of the pollutant concentration and carbon dioxide concentration shall each be on a consistent basis (wet or dry); and the following conversion procedure shall be used:

$$E = CF_c\left[\frac{100}{\text{percent } CO_2}\right]$$

where:

E, C, F_c, and %CO are determined under paragraph (f) of this section.

Appendix B—Performance Specifications

5. Performance Specification 1 is amended by revising paragraph 6.3 as follows:

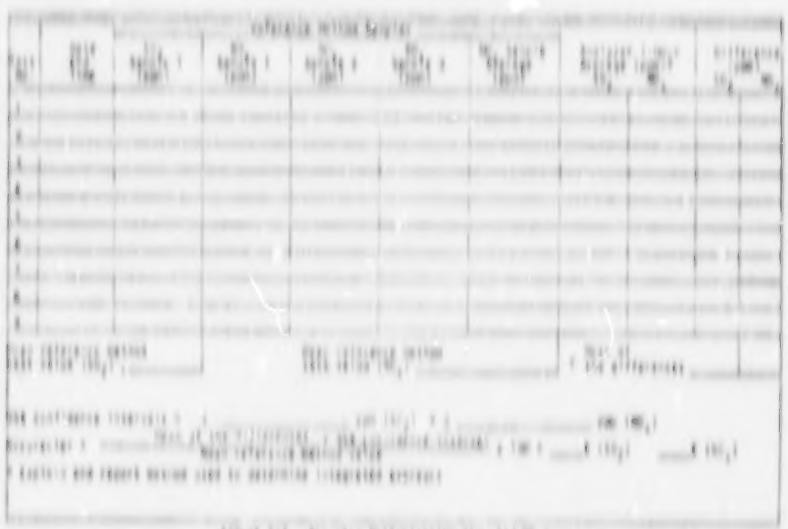
* * * * *

6. * * *

6.3 Conformance with the requirements of section 6.1 may be demonstrated by the owner or operator of the affected facility by testing each analyzer or by obtaining a certificate of conformance from the instrument manufacturer. The certificate must certify that at least one analyzer from each month's production was tested and satisfactorily met all applicable requirements. The certificate must state that the first analyzer randomly sampled met all requirements of paragraph 6 of this specification. If any of the requirements were not met, the certificate must show that the entire month's analyzer production was resampled according to the military standard, tests sampling procedure (MIL-STD-105D), inspection level II, was selected for each of the applicable requirements under paragraph 6 of this specification, and was determined to be acceptable under MIL-STD-105D procedures. The certificate of conformance must show the results of each test performed for the analyzers sampled during the month the analyzer being installed was produced.

* * * * *

6. Performance Specification 2 is amended by revising Figure 2-3 as follows:


Effluent gas flow rate
Sample point
Sample point
Sample point

6 CFR

[FRL 686-4]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Delegation of Authority to City of Philadelphia

Pursuant to the delegation of authority for the standards of performance for new stationary sources (NSPS) to the City of Philadelphia on September 29, 1976, EPA is today amending 40 CFR 60.4, Address, to reflect this delegation. For a notice announcing this delegation, see FR Doc. 77-4713 published in the Notices section of today's Federal Register. The amended § 60.4, which adds the address of the Philadelphia Department of Public Health, Air Management Services, to which all reports, requests, applications, submittals and communications to the Administrator pursuant to this part must also be addressed, is set forth below.

The Administrator finds good cause for foregoing prior public notice and for making this rulemaking effective immediately in that it is an administrative change and not one of substantive content. No additional substantive burdens are imposed on the parties affected. The delegation which is reflected by this Administrative amendment was effective on September 29, 1976, and it serves no purpose to delay the technical change of this address to the Code of Federal Regulations.

This rulemaking is effective immediately, and is issued under the authority of section 111 of the Clean Air Act as amended, 42 U.S.C. 1857c-6.

Dated: January 28, 1977.

A. R. Moseley,
Acting Regional Administrator.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. In § 60.4, paragraph (b) is amended by revising subparagraph (xiii) to read as follows:

§ 60.4 Address.

* * * * *

(b) * * *

(A) * * *

(xiii) City of Philadelphia, Philadelphia Department of Public Health, Air Management Services, 501 Arch Street, Philadelphia, Pennsylvania 19106.

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[FR Doc. 77-3708 Filed 2-3-77; 8:45 am]

SECTION V

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Proposed Amendments

ENVIRONMENTAL PROTECTION AGENCY

■

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Proposed Emission Guidelines for the Control of Sulfuric Acid Mist From Existing Sulfuric Acid Production Units

SUBPART C

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 681-4]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Emission Guidelines for the Control of Sulfuric Acid Mist From Existing Sulfuric Acid Production Units

The purpose of this notice is to propose emission guidelines and times for compliance for the control of sulfuric acid mist emissions from existing sulfuric acid production units, and to announce the publication of a draft guideline document concerning the control of sulfuric acid mist emissions from such units.

The Clean Air Act (42 U.S.C. 1857 et seq.) as amended, applies to three general categories of pollutants emitted from stationary sources. The first category consists of pollutants (often referred to as "criteria pollutants") for which air quality criteria and national ambient air quality standards are established under sections 108 and 109 of the Act and which are controlled by state implementation plans under section 110. The second category consists of pollutants (lead and controlled as hazardous pollutants under section 112 of the Act. The third category consists of pollutants that may cause or contribute to the endangerment of public health or welfare but are not or cannot be controlled under sections 108-110 or 112. Section 111(d) requires control of existing sources of such pollutants whenever standards of performance (for these pollutants) are established under section 111(b) for new sources of the same type. For convenience of reference, such pollutants are referred to as "designated pollutants," and existing facilities whose emissions of such pollutants must be controlled under section 111(d) are referred to as "designated facilities."

On November 17, 1971, (42 FR 53460), EPA promulgated a new subpart B to 40 CFR Part 60 establishing procedures and requirements for submittal of plans for control of designated pollutants from designated facilities under section 111(d). A summary of subpart B and a discussion of the basic concepts underlying it appears at this preamble published in connection with its promulgation. In brief, subpart B provides that after a standard of performance applicable to emissions of a designated pollutant from new sources is promulgated, the Administrator will publish a draft guideline document containing information pertinent to the control of the same pollutant from designated (i.e. existing) facilities. He will also publish a notice of availability of the draft guideline document and invite comments on its contents. After publication of a final guideline document for the pollutant in question, the States will have nine months to develop and submit plans for control of that pollutant from designated facilities. Within four months after the date for submission of plans the Administrator will approve or disapprove each plan (or portions thereof). If a state plan (or portion thereof) is disapproved, the Administrator will promulgate a plan (or portion thereof) within six months after the date for plan submission. These and related provisions of subpart B are basically patterned after section 110 of the Act and 40 CFR Part 51 (concerning adoption and submittal of state implementation plans under section 110).

As discussed in the preamble to subpart B, a distinction is drawn between designated pollutants which may cause or contribute to endangerment of public health (referred to as "health-related pollutants") and those for which adverse effects on public health have not been demonstrated (referred to as "welfare-related pollutants"). For health-related pollutants, emission standards and compliance schedules in state plans must ordinarily be at least as stringent as the corresponding emission guidelines and compliance times specified in EPA's guideline documents as modified in subpart C of 40 CFR Part 60. States may apply less stringent requirements when economic factors or physical limitations make such application significantly more reasonable. For welfare-related pollutants, States may balance the emission guidelines, compliance times, and other information in EPA's guideline documents against other factors of public concern in developing their plans, as explained more fully in the preamble to subpart B and in the introductory portion of each guideline document. Thus, the States have more flexibility in establishing plans for welfare-related pollutants than for plans involving pollutants that may affect public health.

Standards of performance for sulfuric acid mist emissions from new sulfuric acid production units were promulgated on December 23, 1971 (36 FR 24876). A draft guideline document for the control of sulfuric acid mist emissions from existing sulfuric acid production units has been prepared and is available as specified below, in accordance with section 111(d) of the Act. Publication of the draft guideline document was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies. A copy of the draft guideline document is available for inspection at the Public Information Reference Unit (EPA Library), Room 2922, 401 M Street, S.W., Washington, D.C. In addition, copies may be obtained free of charge by writing to the Public Information Center (PM-215), Environmental Protection Agency, Washington, D.C. 20460 (specify "Draft Guideline Document: Control of Acid Mist Emissions From Existing Sulfuric Acid Production Units, September 1976").

The Administrator has determined that sulfuric acid mist is a health-related pollutant. The rationale for this determination is included in Chapter 4 of the draft guideline document. In summary, sulfuric acid mist has been shown to cause acute and chronic irritation to the lungs and bronchial tubes in humans. Toxicological studies have shown that of all sulfates, sulfuric acid mist is the greatest respiratory irritant. There are human clinical studies specific to sulfuric acid mist which indicate health effects occur in healthy, young adults with short-term exposure to levels reasonably expected to occur around uncontrolled sulfuric acid plants. It is a reasonable assumption that potentially more sensitive individuals such as infants, the elderly, and persons whose health is already compromised by pre-existing health problems would exhibit adverse effects at even lower levels than the clinical studies indicated, or more serious adverse effects at the levels studied.

In addition to health effects, sulfuric acid mist has the following effects on public welfare as that term is defined in the Act: reduced visibility; acceleration of metal corrosion; disintegration of building materials, especially those containing calcium carbonate; textile and paper damage; and vegetation damage.

The emission guideline and time for compliance in this proposed rulemaking reflect the Administrator's judgment on the degree of emission control achievable with the best system of emission reduction considering the cost of such reduction that has been adequately demonstrated for existing sulfuric acid production units and the time within which those systems can be purchased and installed. The proposed sulfuric acid mist emission guideline of 0.15 grams acid mist per kilogram of acid produced (0.3 lb/ton) is based upon the degree of control achievable through the application of mist eliminators to existing sulfuric acid production units. There are three types of mist eliminators: vertical wire-mesh panel and horizontal dual-bed. The vertical panel and horizontal dual pad mist eliminators are less effective and less expensive than the vertical wire mist eliminators. The acid mist standard of performance for new sulfuric acid plants (0.075 g/kg) was based on application of vertical wire mist eliminators. The reason for the difference between the emission guideline and the standard of performance for new sources is the concentration of acid sulfuric acid production units burning sulfur and producing 98% acid or low strength streams are easily controlled to 0.15 g/kg using vertical panel or horizontal dual pad mist eliminators. Plants burning imported sulfur feedstocks and/or producing strong oleum normally must use vertical wire mist eliminators to attain 0.075 g/kg or less. Exceptions will be the new source standard requires installation of a vertical wire mist eliminator on all types of plants. Many sulfur burning plants presently have horizontal dual pad or vertical panel type mist eliminators installed and thus the double retrofitting involved with a guideline less than 0.15 g/kg would cause an adverse economic impact on the industry.

It is important to note that the economic analysis regarding double retrofitting leading to the emission guideline was performed on a national scale. State standards as low as the standard of performance for new sources can be [illegible]

ported as a best retrofit standard where double retrofitting is not an issue.

A complete discussion of the alternatives considered and other technical and economic factors which led to the guideline of 0.35 g/Sg are included in the draft guideline document. The review of the economic impact has shown that the proposal is not a major action under the Inflationary Impact Statement (IIS) program and no IIS is needed.

Interested persons may participate in this rule-making by submitting written comments (in triplicate) to the Emission Standards and Engineering Division, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin. The Administrator will welcome comments on all aspects of this proposal, including economic and technological issues and the determination that sulfuric acid mist is a health related pollutant for purposes of section 111(d) and subpart B of 40 CFR Part 60. All relevant comments postmarked no later than December 9, 1976 will be considered. Copies of comments received will be available for inspection and copying during normal business hours at the Environmental Protection Agency Public Information Reference Unit, Room 2922 (EPA Library), 401 M Street, S.W., Washington, D.C.

This notice of proposed rulemaking is issued under the authority of sections 111(d), 114 and 301(a) of the Clean Air Act, as amended (42 U.S.C. 1857c-6(d), 1857c-9, 1857g(a)).

Dated: October 28, 1976.

Russell E. Train,
Administrator.

It is proposed to amend Part 60 of Chapter I of Title 40 of the Code of Federal Regulations by adding subpart C as follows:

Subpart C—Emission Guidelines and Compliance Times

Sec.
60.30 Scope.
60.31 Definitions.
60.32 Designated facilities.
60.33 Emission guidelines.
60.34 Compliance times.

Authority: Secs. 111, 114, and 301(a) of the Clean Air Act as amended by sec. 4(a) of Pub. L. 91-604, 91 Stat. 1676 and by sec. 15(c)(2) of Pub. L. 91-604, 91 Stat. 1713 (42 U.S.C. 1857c-6, 1857c-9, 1857g(a)).

Subpart C—Emission Guidelines and Compliance Times

§ 60.30 Scope.

This subpart contains emission guidelines and compliance times for the control of certain designated pollutants from certain designated facilities in accordance with section 111(d) of the Act and Subpart B.

§ 60.31 Definitions.

Terms used but not defined in this subpart have the meaning given them in the Act and in Subparts A and B of this part.

§ 60.32 Designated facilities.

(a) *Sulfuric acid production units.* The designated facility to which §§ 60.33 (a) and 60.34(a) apply is each existing "sulfuric acid production unit" as defined in § 60.81(a) of Subpart H.

§ 60.33 Emission guidelines.

(a) *Sulfuric acid production units.* The emission guideline for designated facilities is 0.35 gram sulfuric acid mist (as measured by Reference Method 8 of Appendix A) per kilogram of sulfuric acid produced (0.5 lb/ton), the production being expressed as 100 percent H2SO4.

§ 60.34 Compliance times.

(a) *Sulfuric acid production units.* Planning, awarding of contracts, and installation of equipment capable of attaining the level of the emission guideline established under § 60.33(a) can be accomplished within 17 months after the effective date of a state emission standard for sulfuric acid mist.

[FR Doc. 76-32302 Filed 11-3-76; 8:45 am]

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 601-4]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Emission Guidelines for the Control of Sulfuric Acid Mist From Existing Sulfuric Acid Production Units

Correction

In FR Doc. 76-32302, appearing at page 48706 in the issue for Thursday, November 4, 1976, the comment period in the second paragraph of the first column on page 48707 should be "January 3, 1977."

ENVIRONMENTAL PROTECTION AGENCY

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STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Lignite-Fired Steam Generators

SUBPART D

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 650-5]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Lignite Fired Steam Generators

The Environmental Protection Agency (EPA) is considering amendments to Subpart D of 40 CFR Part 60 (Fossil Fuel-Fired Steam Generators) to establish standards of performance for emissions of nitrogen oxides from new lignite-fired steam generators of greater than 73 megawatts heat input (250 million Btu per hour) and to incorporate the International System of Units (modernized metric system) as applicable.

On December 23, 1971 (36 FR 24877), EPA promulgated standards of performance for fossil fuel-fired steam generators including were standards for particulate matter, sulfur dioxide, and nitrogen oxides applicable to gaseous, liquid, and solid fuel fired facilities. However because of a lack of information on nitrogen oxides emissions, lignite-fired facilities were exempted from the nitrogen oxides standard for solid fossil fuels although they are subject to the standards for particulate matter and sulfur dioxide.

EPA has gathered additional information on lignite-fired facilities and the background material on the proposed amendment to Subpart D have been published in a report entitled "Standards Support and Environmental Impact Statement, Volume I: Proposed Standards of Performance for Lignite-Fired Steam Generators," hereafter referred to as the EISS. Copies are available on request from the EPA Public Information Center (PM 215), Environmental Protection Agency, Washington, D.C. 20460 (specify Standards Support and Environmental Impact Statement, Volume I: Proposed Standards of Performance for Lignite-Fired Steam Generators). The information contained in the EISS is briefly discussed in this preamble to the proposed standard of performance.

International System of Units

In accordance with the objective to implement national use of the metric system, EPA presents numerical values in both metric units and English units in its regulations and technical publications. In an effort to simplify use of the metric units of measurement, EPA now uses the International System of Units (SI) as set forth in a publication by the American Society for Testing and Materials entitled "Standard for Metric Practice" (designation: E 380-72). Therefore, EPA is proposing to revise the appropriate portions of Subpart D to reflect use of SI units.

Proposed Standard

The proposed standard of performance limits emissions of nitrogen oxides to 520 nanograms per joule of heat input (0.6 pound per million Btu) from lignite-fired steam generators having a capacity greater than 73 megawatts heat input rate (250 million Btu per hour). The proposed standard reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction) has been adequately demonstrated. The best system is considered to be a combination of staged combustion and low excess air.

Economic and Environmental Impacts

Based on historical growth rates, it is estimated that 25 new lignite-fired steam generators would be subject to the proposed standard by 1985. The proposed standard would reduce NO_x emissions by 139,000 Mg yr (141,000 T yr). Controlling NO_x emissions to the level of the proposed standard would result in insignificant increases in capital and annualized costs for the utility.

Since approximately 90 percent of lignite-fired steam generators of rated capacity greater than 73 MW heat input are owned by electric utilities, the cost of complying with the proposed standard was analyzed for the lignite utility industry. The cost to the utilities appears to be negligible relative to the capital investment costs. Available information indicates that, at most, nitrogen oxides control would increase capital investment costs by only 0.5 percent for a new lignite-fired utility boiler and ancillary equipment. The cost increase for NO_x control represents an estimated increase of two dollars per installed kilowatt relative to an estimated typical cost of about 400 dollars per installed kilowatt (capacity based on costs for a bituminous coal-fired boiler island. The costs for NO_x control would have negligible effect on power costs to consumers. The review of the economic impact has shown that the proposal is not a major action under the Inflationary Impact Statement (IIS) procedures; and no IIS is needed.

The environmental impact of the proposed standard is beneficial since the increase in emissions due to growth of lignite-fired steam generators would be minimized. The proposed standard should result in a 50 percent reduction in the mass of nitrogen oxide emissions from new lignite-fired boilers. It would reduce the atmospheric burden of nitrogen oxides and would help prevent increased ambient oxidant concentrations in areas where lignite-fired steam generators will be located, primarily North Dakota and Texas. There are no adverse environmental impacts associated with the proposed standard. Control techniques required to comply with the proposed standard do not cause boiler efficiency losses and thus there are no incremental energy demands associated with the proposed standard. A complete analysis of the economic and environmental impacts may be found in Chapters VI and VIII of the EISS.

Control Systems

Nitrogen oxides from fossil fuel combustion are formed via two mechanisms: (1) Thermal fixation (oxidation of atmospheric nitrogen (N_2) in the combustion air), and (2) oxidation of organic nitrogen in the fuel. Oxidation of N_2 can be prevented by reducing the level of thermal excitation in the flame by means of (a) flue gas recirculation, (b) staged combustion, (c) water injection, (d) reduced air preheat, or (e) combinations of these techniques. Nitrogen oxides emissions due to the oxidation of organic nitrogen in the fuel can be controlled by using fuels with small amounts of organic nitrogen and by removing nitrogen from the volatilization zone by means of (a) low excess air, (b) staged combustion, and or (c) fuel air mixing pattern adjustment (burner design). Fuels such as coal residual oil, and lignite contain 0.5 to 1.5 percent organic nitrogen, and oxidation of this fuel nitrogen may be responsible for as much as 50 to 80 percent of the total nitrogen oxides emissions from pulverized coal combustion. Therefore the organic nitrogen content of fuel may be a limiting factor in controlling nitrogen oxides emissions. The fact that the organic nitrogen content of the U.S. lignites do not vary appreciably precludes nitrogen oxides control by switching to lignite with a lower organic nitrogen content.

Water injection and reduced air preheat significantly reduce the efficiency of a steam generator and consequently are not practical. Nitrogen oxides control techniques Flue gas recirculation does not reduce nitrogen oxides emissions caused by the oxidation of the organic nitrogen in the lignite and it adversely affects the efficiency of a steam generator. Therefore low excess air (LEA), staged combustion (SC), low emissions burners, and combined LEA and SC are considered the most feasible control systems.

In addition to the control systems just discussed, the fuel burning equipment design parameters can affect the amount of nitrogen oxides emitted and the degree to which the control systems are effective. Lignite firing has been demonstrated in pulverized fired cyclone fired and stoker fired steam generating units. Cyclone fired units have the lowest heat release rate and thus have lower nitrogen oxides emissions than the other types. Units but are limited in physical size and are not expected to be of importance in future lignite-fired steam generating units. Cyclone fired units have the highest heat release rate and the highest nitrogen oxides emissions. Pulverized fired units have a lower heat release rate than cyclone fired units, but a higher rate than stoker fired units.

EPA Test Results

Of the 15 lignite fired units in operation in 1974, four utility fired units were chosen for EPA's test program. Included were three pulverized fired units (one tangentially fired and one two) (the opposed fired), and one cyclone fired unit.

Operating with low excess air and staged combustion, all types of fuel burning equipment exhibited reduced nitrogen oxides emissions over baseline con-

dittions. The horizontally opposed- and cyclone-fired units are more responsive to nitrogen oxides control techniques on a percentage basis but the tangentially-fired units using staged combustion yielded the lowest nitrogen oxides emissions. Cyclone-fired units cannot be dependably operated with low excess air firing or staged combustion because of flame instability problems; however, staged combustion of cyclone-fired units can be achieved by firing auxiliary fuel.

On the basis of the test data, it appears that the cyclone-fired units can consistently meet a nitrogen oxides standard more stringent than 340 nanograms per joule (0.8 pound per million Btu). The test data also indicate that horizontally opposed-fired units would have difficulty consistently achieving a nitrogen oxides standard of 260 nanograms per joule (0.6 pound per million Btu) over a long time period. However, the placement of low emission burners appears promising for application to horizontally opposed-fired units, and such units should be able to attain a standard of 260 nanograms per joule. Tangentially-fired units should have no difficulty meeting a standard of 260 nanograms per joule.

RATIONALE FOR PROPOSED STANDARDS

In deciding the nitrogen oxides limit for the proposed standard, EPA considered proposing the same standard for lignite-fired steam generators as for the present standard for coal-fired steam generators (340 nanograms per joule (0.8 pound per million Btu)). In the study on control of nitrogen oxides emissions from lignite-fired steam generators, staged combustion and low excess air were found to reduce emissions significantly below the 340 nanograms per joule (0.8 pound per million Btu). The measured emission levels of 170 to 230 nanograms per joule heat input (0.4 to 0.5 pound per million Btu) indicated that the present standard for coal-fired units would not require use of best demonstrated control technology considering [illegible] for lignite-fired units. Studies of [illegible] of nitrogen oxides emissions by combustion modification techniques have shown emission levels for modern bituminous and subbituminous coal-fired utility steam units to be similar to those observed for lignite-fired units. The lower emission levels observed for the lignite and bituminous fired units reflect an improvement in combustion modification techniques and in the design of the burners and of boilers between 1970 and 1974.

Tangentially-fired units could meet (but rarely meet) a standard of 200 nanograms per joule (0.5 pound per million Btu). This standard, however, may not be considered achievable by the horizontally opposed-fired boilers. Since the manufacturers of these units do not make tangentially-fired boilers, a standard of 200 nanograms per joule could leave only one manufacturer of acceptable boilers, which would remove the option of proper competition to obtain competitive bids. EPA requests comments on the following issues: (1) Whether horizontally opposed-fired boilers could meet a standard of 200 nanograms per joule; (2) if not, what would be the effect on the competitive balance of the equipment manufacturing industry; (3) what would be the effects on the power industry; and (4) whether EPA can consider these factors in setting standards based on the best system of emission reduction which has been adequately demonstrated.

The proposed standard of 260 nanograms per joule for lignite-fired steam generators is based on emission and cost data currently available to the Administrator. The proposed standard, while numerically more stringent than the present standard for coal-fired units, will require lignite-fired units to apply the same type of combustion modifications as coal-fired units. EPA recognizes that lignite-fired cyclone units cannot achieve the proposed standard of 260 nanograms per joule (0.6 pound per million Btu). Therefore, EPA has considered the impact such a standard would have on boiler manufacturers and on the lignite-fired steam generating industry. EPA determined that the impact on boiler manufacturers of indirectly prohibiting cyclone-fired units would be negligible. Only one boiler manufacturer markets cyclone-fired units and that manufacturer also markets pulverized-fired units. Effective prohibition of cyclone-fired units is expected to have little effect on this manufacturer because these units represent a minor percentage of the total annual sales for the manufacturer.

The impact of the proposed standard on the lignite-fired steam generating industry is not well defined. EPA has attempted to determine whether units other than cyclone-fired units are available that will meet the proposed standard and if any cost or operating reliability advantages exist between these units and the cyclone-fired units. For large lignite-fired steam generators an alternative to cyclone-fired units is pulverized-fired units. From consultations with the major boiler manufacturers EPA speculated that cyclone-fired units do not have any significant investment cost advantages over an equivalent pulverized-fired unit. Thus, the impact of the prohibition of cyclone-fired units is dependent on the relative operational advantages of cyclone-fired units over pulverized-fired units.

Almost all of the large lignite-fired units in North Dakota have experienced severe operational difficulties as a result of ash fouling of the boiler tube surfaces. Utility boilers firing Texas lignites have not experienced ash fouling problems to the same degree. Research conducted by the Energy Research and Development Administration (ERDA), in Grand Forks, North Dakota, has shown that the sodium content of the lignite is highly correlated with the degree of ash fouling. Lignite ash with three to five percent sodium is considered to have a moderate to high fouling potential and a sodium content greater than five percent has a severe fouling potential. In EPA's judgment, the ash fouling problem can be minimized by designing the boiler with more and thicker air the convective passes than normal, with larger spacing between boiler tubes, and with design of the furnace temperature profile to control tube metal temperatures.

Some of the lignite utilities have claimed that cyclone-fired units can burn lignites with the higher sodium content more reliably than pulverized-fired units because a smaller proportion of the ash enters the boiler. The utilities cited the Minnkota Power Cooperative's cyclone-fired 220 MW boiler was selected and designed based on a cooperative study to develop a better method for firing high sodium lignite. The unit has an excellent record of operating availability since its startup in 1970. However, the unit has not fired the high sodium lignites for which it was designed. In addition, the operating reliability of this unit may be attributed to furnace design features other than the cyclone burner. Since startup of the Minnkota cyclone-fired unit, two additional cyclone-fired units have been placed in commercial operation by power companies and cooperatives in the area. Each of these units has been in operation for less than a year. Both units have been firing lignites of approximately 1 to 1 percent sodium and have been experiencing problems with ash fouling of the boiler tubes and with furnace slagging to different degrees. Since numerous operating problems typically occur in the first year of operation of a steam generator, more operating experience is needed before the performance and reliability of these units on high sodium lignite is evaluated.

Experience with pulverized-fired units is presently limited to two units designed in the early 1960's. At that time problems with plugging in the convective passes because of ash fouling associated with firing high sodium lignite were not fully appreciated. Consequently, these two units were retrofitted with an increased number of sootblowers and the tube spacings were increased in order to obtain reliable operation of the units. Redesign of this nature was implemented to different degrees on the units. The more extensively retrofitted unit has operated reliably for 15 years on lignite with four to six percent sodium in the ash and on split to nine percent sodium lignite for the past year. The less extensively retrofitted unit can be reliably operated by maintaining the sodium content of the fuel below five percent. Based on this experience, new cyclone or pulverized lignite-fired units are designed with greater furnace surface area, increased superheater tube spacing, and increased number of sootblowers. The early experience with pulverized firing apparently has not relieved the problems that pulverized firing of high sodium lignite is impractical. In the early 1970's the United Power Association (UPA) purchased two pulverized-fired units after evaluating bids on both cyclone and pulverized-fired units. These tangentially-fired 500 MW boilers were guaranteed to reliably fire a lignite with a design range of 0.1 to 4.0 percent sodium

The selection of a pulverized-fired unit for a North Dakota lignite with high fouling potential indicates that pulverized-fired units are price competitive with cyclone-fired units and that at least one utility believes that cyclone-fired units are not required for use of a lignite with high fouling potential.

In addition to this limited experience with firing high sodium lignite, preliminary results from a study conducted by EPRI/A showed that cyclone-fired units have a statistically significant lower ash deposition rate than pulverized-fired units. The test was conducted while the units were firing 3.5 to 4.5 percent sodium lignite and insufficient information is available to allow comparison at higher sodium levels. One possible interpretation of these data is that cyclone-fired units can operate on high sodium lignite (greater than six percent) more reliably than pulverized-fired units. However the study's results are not consistent with the experience of operating commercial units and the data may not warrant drawing this conclusion.

EPA has concluded from evaluation of the available information that: (1) While there are differences in operational characteristics of pulverized and cyclone-fired units, both types can reliably operate on high sodium lignite and (2) cyclone-fired units do not have significant operation maintenance, or cost advantages over pulverized-fired units. The manufacturers of pulverized-fired units believe that these units can be as effective as cyclone-fired units for burning lignites, including those with high sodium. Combustion Engineering, which is installing the units for UPEA, is confident that pulverized-fired units can be properly designed to handle the ash fouling and slagging problems of high sodium lignite. Babcock and Wilcox, the other major supplier of lignite-fired units, also believes that a pulverized-fired unit can be designed to reliably burn high sodium lignite. Due to the limited information available at this time and different possible interpretations of the information, EPA realizes that the assessment of relative reliability of pulverized and cyclone-fired units for firing high sodium lignite is debatable. Therefore, EPA is requesting that all interested persons submit factual information on this issue during the comment period. Factual information is specifically requested on the following areas of interest:

1. Investment costs and operation and maintenance costs for either pulverized-fired or cyclone-fired large steam generators designed for moderate or high sodium lignite.

2. The differences, if any, in the design of the convection section of the gas temperature profile between cyclone and pulverized-fired fired steam generators. The comparison should discuss any differences in the number, type or location of sootblowers installed, frequency of operation of soot blowers, comparison of tube spacings or depth of tube banks and other relevant factors.

3. Relative importance of factors considered in selecting a cyclone- or pulverized-fired unit.

It is expected that the above information will allow EPA an opportunity to assess the relative costs of cyclone and pulverized fuel fired lignite steam generators as well as to assess the need for cyclone-fired unit for use of high sodium lignite. The final standard will reflect the conclusions drawn from evaluation of all available factual information. EPA will limit the scope of coverage of the final standard if the data submitted during the comment period justify such a change. The scope of coverage could be limited by applying the standard to lignites having a specified sodium content or by establishing a separate standard for cyclone-fired units, or exempting cyclone-fired units.

It should be noted that standards of performance for new sources established under section 111 of the Clean Air Act reflect emission limits achievable with the best adequately demonstrated systems of emission reduction considering the cost of such systems. State implementation plans (SIP's) approved or promulgated under section 110 of the Act, on the other hand, must provide for the attainment and maintenance of national ambient air quality standards (NAAQS) designed to protect public health and welfare. For that purpose SIP's must in some cases require greater emission reductions than those required by standards of performance for new sources. In addition, States are free under section 116 of the Act to establish more stringent emission limits than those established under section 111 or those necessary to attain or maintain the NAAQS under section 110. Thus, new and existing sources may in some cases be subject to limitations more stringent than EPA's standards of performance under section 111.

Public Participation

In accordance with section 117(c) of the Act, publication of these proposed amendments to 40 CFR Part 60 was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies. Interested persons may participate in this rulemaking by submitting written comments (in triplicate) to the Emission Standards and Engineering Division, Environmental Protection Agency (MD-13), Research Triangle Park, North Carolina 27711, Attention: Mr. Tom R. Goodwin. All comments received not later than 60 days from date of publication will be considered. Copies of comments received will be available for inspection and copying during normal business hours at the Public Information Reference Unit, Room 2922 (EPA Library), 401 M Street, SW., Washington, D.C.

(Secs. 111, 114 and 301(a) of the Clean Air Act as amended by sec. 3(a) of Pub. L. 91-604, 84 Stat. 1678 and by sec. 4(a)(2) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-6, 1857c-9 and 1857g(a)).)

The Environmental Protection Agency has determined that this document does not contain a major proposal requiring preparation of an Inflation Impact Statement under Executive Order 11821 and OMB Circular A-107.

Dated: December 15, 1978.

Russell E. Train,
Administrator.

It is proposed to amend Part 60 of Chapter I, Title 40 of the Code of Federal Regulations by revising Subparts A and D as follows:

Subpart A—General Provisions

1. Section 60.2 is amended by substituting the International System of Units (SI) in paragraph (l) as follows:

§ 60.2 Definitions.

* * * * *

(l) "Standard conditions" means a temperature of 293 K (68°F) and a pressure of 101.3 kilonewtons (29.92 in Hg).

* * * * *

Subpart D—Standards of Performance for Fossil-Fuel-Fired Steam Generators

2. Section 60.41 is amended by adding paragraph (f) as follows:

§ 60.41 Definitions.

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(f) "Coal" means all solid fossil fuels classified as anthracite, bituminous, subbituminous, or lignite by A S T M Designation D 388-66.

3. Section 60.44 is amended by adding paragraph (a)(4) and by revising paragraph (b) as follows:

§ 60.44 Standard for nitrogen oxides.

(a) * * *

(4) 260 nanograms per joule heat input (0.60 pound per million Btu) derived from lignite.

(b) When different fossil fuels are burned simultaneously in any combination, the applicable standards (in ng J shall be determined by proration. Compliance shall be determined by using the following formula:

[illegible]

When a solid fossil fuel containing 25 percent by weight or more of coal refuse is burned in combination with gaseous fossil or other solid fossil fuel or wood residue, the standard for nitrogen oxides does not apply.

4. Section 60.45 is amended by adding paragraph (f)(4)(iii) as follows:

§ 60.45 Emission and fuel monitoring.

* * * * *

(f) * * *

(4) * * *

(iii) For lignite coal as classified according to A S T M D 388-66 [illegible] (g/J) (ng/J) (lb/million Btu) and [illegible] (ng/J) (lb/million Btu).

[illegible]

ENVIRONMENTAL PROTECTION AGENCY

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STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

PETROLEUM REFINERY

SUBPART J

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 591-4]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Petroleum Refinery Fluid Catalytic Cracking Unit Catalyst Regenerators

Under the authority of section 111 of the Clean Air Act, as amended, the Administrator is proposing a revision to 40 CFR 60.105(a)(2), and 60.105(b)(1), opacity standard of performance for new, modified, and reconstructed petroleum refinery fluid catalytic cracking unit catalyst regenerators.

Proposed Revision

The proposed revision would change the opacity standard from 30 percent, except for three minutes in any one hour, to 30 percent, except for two six-minute average opacity readings in any one hour. The revised standard would be neither more nor less stringent than the present standard, but would be consistent with the new procedure for determining the opacity of emissions.

Rationale

On June 29, 1973, the U.S. Court of Appeals for the District of Columbia circuit remanded to EPA the new source performance standard for portland cement plants (40 CFR 60.60) promulgated under section 111 of the Clean Air Act (*Portland Cement Association v. Ruckelshaus*, 486 F. 2d 375). One of the issues remanded was the use of opacity standards. On November 12, 1974, EPA responded to the remand (39 FR 39872), and on May 22, 1975, the Court affirmed the use of opacity standards (513 F. 2d 506).

In the response EPA reconsidered the use of opacity standards and concluded that they are a reliable, inexpensive, and useful means of ensuring that control equipment is properly maintained and operated at all times. EPA also made changes in the general provisions of 40 CFR Part 60 and in the test method for determining the opacity of emissions to eliminate the possibility of a properly maintained and operated source being in violation of the applicable opacity standard while concurrently meeting a mass or concentration emission standard applicable to the source.

The principal revisions to the regulations (40 CFR Part 60, Standards of Performance for New Stationary Sources) which apply to all opacity standards are as follows:

1. Reference Method 9 visual opacity test procedures are revised to base compliance on the arithmetic average of 24 consecutive opacity observations recorded at 15-second intervals (six minutes) rather than on any single six-minute period. Each set of 24 observations must fall within a single clock hour, but there is no restriction on the number of sets which may be taken during the hour or on the hours of the day during which observations may be made. The revision changing the averaging time to six minutes was included to provide a more representative basis for enforcement actions. The maximum opacity of emissions permitted during the conduct of any test is not changed by this revision

...00 barrels per day are built, or existing units are modified or reconstructed, and these facilities have trouble meeting the proposed revised opacity standard, relief can be obtained through the mechanism of § 60.11(e).

At most fluid catalytic cracking units, carbon monoxide emissions are controlled by carbon monoxide boilers. Periodically, the boiler tubes require soot blowing to remove dust or soot deposited on these tubes. Soot blowing increases the opacity of the plume from the catalyst regenerator dramatically, although only momentarily. Rather than increase the level of the opacity standard to include soot blowing, therefore, it is more appropriate to provide an exemption from the standard. The opacity data indicate that an exemption of two six-minute average opacity readings per hour is necessary to permit soot blowing. Thus, an exemption for soot blowing is included in the proposed revision to the opacity standard.

It should be noted that standards of performance for new sources established under section 111 of the Clean Air Act reflect emission limits achievable with the best adequately demonstrated systems of emission reduction considering the cost of such system. State implementation plans (SIP's) approved or promulgated under section 110 of the Act, on the other hand, must provide for the attainment and maintenance of national ambient air quality standards (NAAQS) designed to protect public health and welfare. For that purpose SIP's must in some cases require greater emission reductions than those required by standards of performance for new sources. In addition, States are free under section 116 of the Act to establish more stringent emission limits than those established under section 111 or those necessary to attain or maintain the NAAQS under section 110. Thus, new and existing sources may in some cases be subject to limitations more stringent than EPA's standards of performance under section 111.

Public Participation

Interested persons may participate in this proposed rulemaking by submitting written comments (in triplicate) to the Emission Standards and Engineering Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin. The Administrator will welcome comments on all aspects of the proposed revision.

All relevant comments received on or before October 27, 1976 will be considered. Comments received will be available for public inspection and copying at the EPA Public Information Reference Unit, Room 2922 (EPA Library), 401 M Street, S.W., Washington, D.C.

Background information on this proposed revision of the opacity standard for petroleum refinery fluid catalytic cracking unit catalyst regenerators has been published in a document "Reevaluation of Opacity Standards of Performance, Petroleum Refinery Fluid Catalytic Cracking Unit Catalyst Regenerators." Copies of this document may be obtained by writing to the Public Information Center (PM-215), U.S. Environmental Protection Agency, Washington, D.C. 20460 (specify "Reevaluation of Opacity Standards of Performance, Petroleum Refinery Fluid Catalytic Cracking Unit Catalyst Regenerators").

Authority

This notice of proposed rulemaking is issued under authority of sections 111, 114, and 301(a) of the Clean Air Act, as amended by section 7(a) of Public Law 91-604, 84 Stat. 1678 and by section 15(c)(2) of Public Law 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-6, 1857c-9, 1857g(a)).

Dated: August 19, 1976.

Russell E. Train,
Administrator.

It is proposed to amend Part 60, Chapter I of Title 40 of the Code of Federal Regulations as follows:

1. Section 60.102(a)(2) is revised to read as follows:

§ 60.102 Standard for particulate matter.

(a) * * *

(2) Gases exhibiting greater than 20 percent opacity, except for two six-minute average opacity readings in any one hour. Where the presence of uncombined water is the only reason for failure to meet the requirements of this subparagraph, such failure shall not be a violation of this section.

* * * * *

2. Section 60.105(a)(1) is revised to read as follows:

§ 60.105 Emission monitoring.

* * * * *

(a) * * *

(1) Opacity. All hourly periods in which there are three or more six-minute average opacity readings during which the average opacity of the gases discharged into the atmosphere from any fluid catalytic cracking unit catalyst regenerator subject to § 60.102 exceeds 20 percent.

* * * * *

[FR Doc.76-25080 Filed 8-27-76;8:45 am]

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 610-7]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Petroleum Refinery Sulfur Recovery Plants

Notice is hereby given that under the authority of section 111 of the Clean Air Act, as amended, the Administrator is proposing standards of performance for new, modified or reconstructed petroleum refinery sulfur recovery plants.

The Administrator is also proposing a new reference method to be used for determining emissions of hydrogen sulfide and reduced sulfur compounds from petroleum refinery sulfur recovery plants.

Proposed Standards

As proposed, the standards would apply to petroleum refinery sulfur recovery plants. Generally, these plants are physically located within petroleum refineries. Occasionally, however, refineries will pipe the sulfur-rich gas stream to a nearby facility such as a chemical plant where the sulfur is recovered. The standards would apply to all refinery sulfur recovery plants, whether they are physically located within a petroleum refinery or within the confines of another facility.

The standards would limit the concentration of sulfur dioxide (SO_2) in the gases discharged to the atmosphere to 0.025 percent by volume at zero percent oxygen and on a dry basis. Where the emission control system installed to comply with these standards destroys residual emissions of hydrogen sulfide (H_2S), carbonyl sulfide (COS), and carbon disulfide (CS_2), the standards would limit the concentration of H_2S and the total concentration of H_2S, COS and CS_2 (calculated as SO_2) in the gases discharged to the atmosphere to 0.0010 percent and 0.030 percent by volume at zero percent oxygen and on a dry basis, respectively.

Environmental and Economic Impacts

The proposed standards would require new, modified or reconstructed refinery sulfur recovery plants to reduce emissions by about 99 percent compared to emissions from existing refinery sulfur recovery plants. This would increase the overall sulfur recovery of a typical refinery sulfur recovery plant from about 94 percent to about 99.8 percent.

It is expected that the proposed standards would apply to about 80 new refinery sulfur plants by 1980 (Type A and modification or reconstruction of existing refinery sulfur plants are anticipated). The proposed standards would reduce national sulfur dioxide emissions from these new refinery sulfur plants by about 45 tons per day.

This reduction in national SO_2 emissions would be obtained without adverse impacts on other aspects of the environment (such as increased solid waste disposal, water pollution, or noise). The proposed standards would also result in a reduction in the growth of national energy consumption by some 54 million BTU/yr, or about 90,000 barrels of fuel oil per year, by 1980.

The economic impact of the proposed standards would be reasonable both on large and on small refiners, although it is somewhat more severe on small refiners than large refiners. For the small refiner (processing less than 30,000 barrels per calendar day (BCD)), the proposed standards could reduce profitability, as measured by return on assets, by 1.2 to 1.5 percent. A price increase of only 0.05 to 1.0 percent on all petroleum products, however, would restore the small refiner's profitability. The impact on a large refiner (processing more than 30,000 BCD) is considerably less due to economies of scale. The proposed standards could reduce the profitability of a large refiner by 0.5 to 1.0 percent. A price increase of only 0.18 to 0.36 percent on all petroleum products, however, would restore the large refiner's profitability. Consequently, the proposed standards would not adversely affect the growth of either the large refiners or the small refiner sector of the domestic refining industry.

To comply with these proposed standards, the investment required by the domestic refining industry would total some $110 million ($84 over the five-year period from 1976 to 1980). The annual operating costs of the industry would increase by some $10 MM per year by 1980 and petroleum product prices could increase by 0.1 to 1.0 percent.

The review of the economic impact has shown that this proposal is not a major action under the Inflationary Impact Statement (IIS) program and no IIS is needed.

Selection of Source Categories and Applicable Facilities

Section 111 of the Clean Air Act directs the Administrator to establish standards of performance for new stationary sources of air pollution which may contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare. Sulfur recovery plants are a major source of SO_2 emissions in petroleum refineries. Although a few State or local regulations already require emission control equivalent to the proposed standards, most State regulations require less stringent control of refinery sulfur recovery plants.

Reducing SO_2 emissions from new, modified or reconstructed refinery sulfur recovery plants takes on importance in view of the existing growth in the number and size of these plants and the urban location of many petroleum refineries where high ambient air pollution concentrations of SO_2 already exist. Current growth projections for the domestic petroleum refining industry (for example, forecasts that refinery sulfur recovery plant capacity will double between 1975 and 1980).

Considering these factors, the proposed standards have been developed to limit emissions of SO_2 from petroleum refinery sulfur recovery plants. Some of the emission control systems that might be installed to reduce emissions of SO_2, however, discharge residual emissions of hydrogen sulfide (H_2S), carbonyl sulfide (COS) and carbon disulfide (CS_2), to the atmosphere. The proposed standards, therefore, include limits on emissions of these pollutants.

Rationale

Two alternative systems of SO_2 emission control were considered as candidates to serve as the basis for standards of performance: (1) the low-temperature extended Claus reaction system (alternative I) and (2) various tail gas scrubbing systems (alternative II). The alternative I system reduces emissions from uncontrolled refinery sulfur recovery plants by 80-85 percent, while the alternative II system reduces emissions by 99.8 percent. Overall sulfur recovery of the refinery sulfur plant is increased from 94 to 99.8 percent with the use of an alternative II system.

Standards of performance based on alternative I would have an essentially negligible impact on SO_2 emissions since most state implementation plans (SIP's) already require equivalent control. As outlined above, however, standards based on alternative II would reduce SO_2 emissions by about 90 percent below levels required by most SIP's and would lead to a reduction in national SO_2 emissions of some 45 tons per day in 1980. Standards based on alternative II would also have no adverse environmental impacts in other areas such as increased water pollution, solid waste disposal, energy consumption, or noise. In addition, the economic impact of standards based on alternative II would be reasonable both on large and on small refiners. Consequently, alternative II represents the best system of emission reduction and the proposed standards are based on this alternative.

The tail gas scrubbing systems of alternative II, however, include two different types of emission control systems for reducing SO_2 emissions from refinery sulfur recovery plants: oxidation control systems and reduction control systems. In the oxidation control system, the tail gas from a refinery sulfur plant are controlled directly by tail gas scrubbing. In the reduction control system, the SO_2 emissions are first converted to H_2S emissions which are then controlled by tail gas scrubbing. Residual emissions discharged into the atmosphere from either the control systems or from reduction control systems which are followed by incineration consist of SO_2 (from oxidation control systems which are not followed by incineration) however (most of the carbonyl sulfide and CS_2 are converted to SO_2). Standards limiting emissions of the pollutants while acknowledging the existence of these pollutants in the emissions from oxidation control systems or reduction control systems followed by incineration are not appropriate for reduction control systems not followed by incineration.

Where [illegible] which are not followed by incineration

[illegible]

are properly operated and maintained. Emissions of reduced sulfur compounds (H_2S, CH_3SH and $(CH_3)_2S$) are insignificant with good operation and maintenance. However, emissions of these pollutants from these systems could lead to significant odor problems, primarily from the H_2S emitted. This situation presents a difficulty in selection which pollutants should be controlled under the proposed standards due to the provisions of section 111(d) of the Act. Sulfur dioxide is a criteria pollutant for which State control of existing sources is not required under section 111(d) since such control is already required by section 110. Reduced sulfur compounds, on the other hand, would be considered designated pollutants subject to the provisions of section 111(d).

Under the EPA regulations implementing section 111(d), after promulgation of a standard of performance for the control of such a designated pollutant, EPA must develop a guideline document containing the necessary information for States to develop plans for controlling emissions of the pollutant (40 CFR 60.22). In this case the document would have to contain information pertinent to the control of reduced sulfur compounds from all existing petroleum refinery sulfur plants which have installed reduction control systems which are not followed by incineration. After final issuance of the guideline document by EPA, all States containing affected plants are required by 40 CFR 60.23 to develop such plans and submit them to EPA for approval. The results about 35 refinery sulfur plants in seven States have installed reduction control systems which are not followed by incineration (excluding the guideline document and State plans). Therefore, could be a significant undertaking resulting the expenditure of considerable resources at the Federal level and by seven States and their local governments. Thus, one purpose of this proposal is to solicit comments from the affected States as to the burden imposed by the implementation of section 111(d) in this case.

If that burden imposed by the implementation of section 111(d) is great, EPA will consider the course of declining to require the adoption and submittal of State plans under 40 CFR 60.22. This option is available due to the unusual factual situation: all existing refinery sulfur plant which have installed reduction control system, which are not followed by incineration, (35 plants in seven States) already have very low emissions of reduced sulfur compounds. Those problem control systems have been installed to comply with State or local air pollution control regulations limiting emissions of SO_2 from existing refinery sulfur plants. To ensure that the installation of these control systems do not lead to local odor problems, these regulations also limit emissions of reduced sulfur compounds, either directly or indirectly. Where emissions of reduced sulfur compounds are limited directly, local regulations specify the maximum concentrations of H_2S and reduced sulfur compounds (H_2S, CH_3SH and $(CH_3)_2S$) that can be present in the tail gases discharged to the atmosphere. Where this approach has been followed, emissions of H_2S are limited to 10 ppm and emissions of reduced sulfur compounds are limited to either 300 or 500 ppm.

Where emissions of reduced sulfur compounds are limited indirectly by local regulations, these regulations require that the best available control control technology be installed. In the process of specifying the best emission control technology, local air pollution control agencies have consulted EPA vendors of existing emission control system and other local air pollution control agencies where these emission control systems have been installed. In terms of limiting emissions of reduced sulfur compounds, this approach has achieved the same end result as the direct regulatory approach. All 35 reduction control system which are now operating have been designed and guaranteed by the vendors of these systems to limit emissions to less than 10 ppm H_2S and less than 300 or 500 ppm reduced sulfur compounds.

Consequently, the current 35 petroleum refinery sulfur plants which have installed reduction control systems which are not followed by incineration are not considered by EPA to be significant sources of reduced sulfur compound emissions. Developing State plans under section 111(d) to control emissions of these pollutants from these facilities, therefore, would not reduce existing emission levels.

On the other hand, if EPA were to propose standards of performance for refinery sulfur plants only for SO_2, without limiting emissions of reduced sulfur compounds, this action could be interpreted to mean that EPA does not consider the control of air pollution problem posed by emissions of reduced sulfur compounds to be important. Such an interpretation could encourage new plants to be built without limiting emissions of these pollutants.

Having determined that the proposed regulation should cover emissions of reduced sulfur compounds from new refinery sulfur recovery plants, but not existing ones, EPA is left with the problem of selecting the appropriate pollutants to control with the proposed standards. Limiting emissions of SO_2 alone would be unsatisfactory due to the risk of reduced sulfur compound pollution from new plants. Limiting reduced sulfur compound emissions as well as SO_2 for new sources still raises some expenditures of effort on the part of EPA and the affected States which is not in fact necessary to achieve control of existing plants.

Considering all the facets of this situation, EPA proposes to limit emissions of both SO_2 and reduced sulfur compounds by these standards of performance fulfilling the intent of section 111 of the Act to prevent new air pollution problems by requiring new, modified, or reconstructed plants to install the best systems of emission reduction considering costs. However, EPA is considering two alternative routes for treating the problem of existing sources. One alternative is for EPA to issue a guideline document under 40 CFR 60.22 based primarily on the information available in the support documents for these standards of performance and to require the seven affected States to submit plans under 40 CFR 60.23. These States that already regulate reduced sulfur compounds by State law will be able to submit relatively simple control plans. Those States in which regulation of reduced sulfur compounds has been accomplished by local ordinances may have to provide for State enforcement before their control plans can be approved.

If the first alternative appears to be excessively burdensome, EPA is also considering a second alternative, because the 35 existing sources are well controlled. The purpose of limiting pollutant emissions from existing sources under the provisions of section 111(d) is to control a pollutant which may cause or contribute to the endangerment of public health or welfare but is not known to be "hazardous" within the meaning of section 112, and is not controlled under sections 108 through 110. Since action under section 111(d) for this instance would not further control the pollutant in question, and existing refinery sulfur plants which have installed reduction control systems not followed by incineration are not endangering the public health or welfare, the conclusion can be drawn that there is no purpose to limiting emissions of these pollutants under section 111(d). Under this alternative, EPA would not issue a guideline document, the chain of events requiring States to develop plans for controlling emissions of these pollutants would not be initiated and these plans would not be developed. (A detailed discussion of this alternative may be found in the Star Force Support and Environmental Impact Statement for Petroleum Sulfur Recovery Plants.)

The data and information available for selecting specific emission limits include the results of emission tests both by the Agency and by local air pollution control agencies, discussions with owners and operators which have installed and are now operating either the oxidation control systems or the reduction control systems and discussions with the vendors of these emission control systems. The SO_2 emission limit is based on emission tests at a refinery sulfur plant controlled by an oxidation control system and at a refinery sulfur plant controlled by a reduction control system followed by incineration. The H_2S and reduced sulfur compound emission limits are based on emission source tests at three refinery sulfur plants controlled by reduction control systems not followed by incineration. The numerical values were selected by adding a reasonable margin for error testing into consideration the limited data base the relative "newness" of the plants

tested, pilot plant data available from vendors on long-term operation, and the experience of owners and operators with these emission control systems.

The 0.030 percent by volume limit for SO_2 emissions and the 0.030 percent by volume limit for reduced sulfur compound emissions are also equivalent, in the sense that both require achieving the same degree of overall sulfur recovery (i.e., 99.9 percent). The numerical limit on SO_2 emissions is lower due to the somewhat greater volume of gases discharged from oxidation control systems and reduction control systems followed by incineration, which is inherent in their design and operation.

It should be noted that standards of performance for new sources established under section 111 of the Clean Air Act reflect emission limits achievable with the best adequately demonstrated system of emission reduction, considering the cost of such systems. State implementation plans (SIP's) approved or promulgated under section 110 of the Act, on the other hand, must provide for the attainment and maintenance of national ambient air quality standards (NAAQS) designed to protect public health and welfare. For that purpose SIP's must in some cases require greater emission reductions than those required by standards of performance for new sources. Indeed, building of new sources may be precluded altogether in some geographical areas. In addition, States are free under section 116 of the Act to establish more stringent emission limits than those established under section 111 or those necessary to attain or maintain the NAAQS under section 110. Thus, new sources may in some cases be subject to limitations more stringent than EPA's standards of performance under section 111, and prospective owners and operators of new sources should be aware of this possibility in planning for such facilities.

Energy

The impact of the proposed standards on the energy consumption of a refinery sulfur recovery plant varies depending on the type of emission control system installed to comply with the standards. If an oxidation control system or a reduction control system followed with incineration were used, the overall energy consumption of a typical sulfur recovery plant would be increased by some 40 percent. If a reduction control system not followed by incineration were used, however, the overall energy consumption would be reduced by some 50 percent. These percentages are high primarily because refinery sulfur recovery plants consume little energy. Typically, for example, a refinery sulfur recovery plant accounts for less than 1 percent of the total energy consumed within a petroleum refinery.

Assuming half of the refinery sulfur recovery plants affected by the proposed standards by 1985 install oxidation control systems or reduction control systems followed by incineration and half install reduction control systems not followed by incineration, the proposed standards would reduce national energy consumption in 1985 by some 54 million BTU/hr, or about 85,000 barrels of fuel oil per year.

Monitoring, Testing, and Recordkeeping

As proposed, the regulations would require monitoring of emissions released to the atmosphere to insure that the emission control systems installed to comply with the proposed standards are properly maintained and operated. If an oxidation control system or a reduction control system followed by incineration were installed, monitoring of SO_2 emissions would be required and if a reduction control system not followed by incineration were installed, monitoring of H_2S and reduced sulfur compound emissions would be required.

Emission monitoring systems for SO_2 are readily available and performance specifications for these monitors have already been promulgated by EPA (40 CFR Part 60 Appendix B). Although a few emission monitoring systems for H_2S and reduced sulfur compounds are available, EPA has not yet developed performance specifications for these monitors. Consequently, until EPA proposes and promulgates these performance specifications, owners and operators subject to the requirement to install H_2S and reduced sulfur compound emission monitors will not be required to do so. The requirement to install these monitors is included in the proposed regulations, however, to ensure that when EPA promulgates these performance specifications, those owners and operators who have installed reduction control systems not followed by incineration which are subject to the proposed standards will be required to retrofit these monitors. This will enable enforcement personnel to ensure that these emission control systems are being properly operated and maintained.

The reference method for determining compliance also depends on the emission control system employed to comply with the proposed standards. If an oxidation control system or a reduction control system followed by incineration were installed, Method 6 - Determination of Sulfur Dioxide Emissions from Stationary Sources would be used to determine emissions of SO_2. If a reduction control system not followed by incineration were installed, the proposed Reference Method 16 - Determination of Hydrogen Sulfide and Reduced Sulfur Compounds Emissions from Sulfur Recovery Plants would be used to determine emissions of H_2S and total emissions of H_2S, COS, and CS_2 (calculated as SO_2).

The proposed Reference Method 16 is based on gas chromatographic separation followed by flame photometric detection. This method permits separation and identification of each individual pollutant (i.e., H_2S, COS and CS_2). To determine compliance with the proposed standards, a sample of the gases discharged to the atmosphere is analyzed to determine emissions of H_2S, COS and CS_2. The concentration of H_2S in these gases is determined directly; the concentration of reduced sulfur compounds in these gases is determined indirectly by adding together the concentrations of H_2S, COS and CS_2. Since emissions are calculated as SO_2, however, the concentrations of CS_2 (having twice the sulfur per molecule of gas) is multiplied by two before adding it to the concentrations of H_2S and COS.

Assessment of Subpart J or Part 60

The proposed standards would be incorporated into 40 CFR Part 60 by amending Subpart J - Standards of Performance for Petroleum Refineries. Maintaining clarity within Subpart J while incorporating the proposed standards requires amendment of a number of existing paragraphs. In all but the case discussed below, these paragraphs have merely been rewritten with no change in content or intent.

Recently, it has been brought to the attention of the Administrator that as Subpart J is now written, a fluid catalytic cracking unit incinerator waste-heat boiler is an affected facility subject to the standard limiting emissions of particulate matter. Thus, if an owner or operator installs an incinerator waste-heat boiler, that boiler must comply with the standard on particulate emissions.

An incinerator waste-heat boiler, however, is an emission control device which reduces emissions of carbon monoxide from a fluid catalytic cracking unit catalyst regenerator. It was not EPA's intent that installation of an emission control device to reduce carbon monoxide emissions would then require installation of another emission control device to reduce particulate emissions. Rather, the intent was to consider the fluid catalytic cracking unit catalyst regenerator together with any associated incinerator waste heat boiler in terms of controlling particulate emissions. If an incinerator waste heat boiler which burns additional liquid or solid fossil fuel is in use, an increase in total particulate emissions would be permitted consistent with good control. Particulate emissions from the combustion of that increment of fuel. Accordingly, fluid catalytic cracking unit incinerator waste heat boilers have been deleted from the list of affected facilities. This amendment of Subpart J, however, is not a change in the intent of the existing standard of performance limiting emissions of particulate matter.

Public Participation

As prescribed by section 111 of the Clean Air Act as amended, this proposal of standards of performance has been preceded by the Administrator's determination that refinery sulfur recovery plants contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare. By publication of this determination in this issue of the Federal Register, the addition of petroleum refinery sulfur recovery plants to the list of affected facilities under the source category of petroleum refineries in accordance with section 111 of the Act, publication of these proposed standards was preceded by

consultation with appropriate advisory committees, independent experts, and Federal departments and agencies.

Interested persons may participate in this rulemaking by submitting written comments (in triplicate) to the Emission Standards and Engineering Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina [illegible] section 307 (d) (5) of the Clean Air Act. The Administrator will welcome comments on all aspects of the proposed regulations, including the designation of sulfur recovery plants as a significant contributor to air pollution which causes or contributes to the endangerment of public health or welfare, economic and technological issues, and the proposed test method.

Comments are invited specifically on the severity of the economic impact of the proposed standards on the small refiner, since a number of interested parties have expressed objection to the absence of a lower level cut-off exempting the small refiner from compliance with the standards. Any comments submitted to the Administrator on this issue, however, should contain specific information and data pertinent to an evaluation of the magnitude of this impact and its severity.

Also the Administrator would be especially interested in receiving comments regarding the issue of controlling reduced sulfur compound emissions without implementing section 111(d), particularly as this would affect the seven States involved.

All relevant comments received on or before December 6, 1976 will be considered. Comments received will be available for public inspection and copying at the EPA Public Information Reference Unit, Room 2922 (EPA Library), 401 M Street, SW., Washington, D.C. 20460.

Background information on these proposed standards of performance has been published in a document "Standard Support and Environmental Impact Statement—Standards of Performance for Petroleum Refinery Sulfur Plants." This document presents the factors considered in the development of the proposed standards, including alternative emission control systems, emission test data, environmental impact, costs and economic considerations. Copies of the document are available free of charge by writing to the Public Information Center (PM-215), U.S. Environmental Protection Agency, Washington, D.C. 20460 (specify "Standards Support and Environmental Impact Statement—Standards of Performance for Petroleum Refinery Sulfur Plants").

Authority. This notice of proposed rulemaking is issued under the authority of sections 111, 114 and 301(a) of the Clean Air Act, as amended (42 U.S.C. 1857c-6 and 7).

Dated: September 28, 1976.

Rogan Gresham,
Acting Administrator.

It is proposed to amend 40 CFR Part 60 as follows:

Subpart J—Standards of Performance for Petroleum Refineries

1. Section 60.100 is revised as follows:

§ 60.100 Applicability and designation of affected facility.

The provisions of this subpart are applicable to the following affected facilities in petroleum refineries: fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and sulfur recovery plants.

2. Section 60.101 is amended by adding paragraphs (j) through (l) as follows:

§ 60.101 Definitions.

* * * * *

(j) "Sulfur recovery plant" means a process unit which recovers hydrogen sulfide produced within a petroleum refinery to elemental sulfur. The sulfur recovery plant need not be physically located within a petroleum refinery.

(k) "Oxidation control system" means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to sulfur dioxide.

(l) "Reduction control system" means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to hydrogen sulfide.

(m) "Reduced sulfur compounds" mean hydrogen sulfide (H_2S), carbonyl sulfide (COS) and carbon disulfide (CS_2).

3. Section 60.102 is amended by revising paragraph (b) introductory text and paragraph (b) as follows:

§ 60.102 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator:

* * * * *

(b) Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator or waste heat boiler in which auxiliary or supplemental liquid or solid fossil fuel is burned, particulate matter in excess of that permitted by paragraph (a)(1) of this section may be emitted to the atmosphere, except that the incremental rate of particulate matter emissions shall not exceed 43.0 g/GJ (0.10 lb/million Btu) of heat input attributable to such liquid or solid fossil fuel.

4. Section 60.104 is amended by revising paragraph (a) as follows:

§ 60.104 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall:

(1) Burn in any fuel gas combustion device any fuel gas which contains hydrogen sulfide in excess of 230 mg/dscm (0.10 gr/dscf), except that the gases resulting from the combustion of fuel gas may be treated to control sulfur dioxide emissions provided the owner or operator demonstrates to the satisfaction of the Administrator that this is as effective in preventing sulfur dioxide emissions to the atmosphere.

(2) Discharge or cause the discharge of any gases into the atmosphere from any sulfur recovery plant containing in excess of:

(i) 0.025 percent by volume of sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by an oxidation control system, or a reduction control system followed by incineration, or

(ii) 0.030 percent by volume of reduced sulfur compounds and 0.010 percent by volume of hydrogen sulfide calculated as sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by a reduction control system not followed by incineration.

* * * * *

5. Section 60.105 is amended by adding paragraphs (a) (4) and (5) and (e) (3) (i) and (ii) as follows:

§ 60.105 Emission monitoring.

(a) * * *

(4) An instrument for continuously monitoring and recording concentrations of H_2S in fuel gases burned in any fuel gas combustion device if compliance with § 60.104(a) is achieved by removing H_2S from the fuel gas before it is burned; or an instrument for continuously monitoring and recording concentrations of SO_2 in the gases discharged into the atmosphere from the combustion of any fuel gas if compliance with § 60.104(a) is achieved by removing H_2S from the combusted fuel gases. If the concentration of H_2S is monitored, fuel gas combustion devices having a common source of fuel gas may be monitored at one location. If monitoring at this location accurately represents the concentration of H_2S in the fuel gas burned.

(5) An instrument for continuously monitoring and recording concentrations of SO_2, in the gases discharged into the atmosphere from the sulfur recovery plant if compliance with § 60.104(b) is achieved through the use of an oxidation control system or a reduction control system followed by incineration; or an instrument for continuously monitoring and recording concentrations of H_2S and reduced sulfur compounds in the gases discharged into the atmosphere from the sulfur recovery plant if compliance with § 60.104(b) is achieved through the use

of a reduction control system not followed by incineration.

* * * * *

(c) * * *

(1) [Reserved]

(2) [Reserved]

(3) Sulfur dioxide. (i) Any hourly period during which the average concentration of SO_2 in fuel gas combusted in any fuel gas combustion device subject to § 60.104(a) exceeds 230 ng/dscm (0.15 gr/dscf). If compliance with § 60.104(b) is achieved by removing SO_2 from the fuel gas before it is burned, or any hourly period during which the average concentration of SO_2, in the gases discharged into the atmosphere from any fuel gas combustion device subject to § 60.104(a) exceeds the level specified in § 60.104(a)(1). If compliance with § 60.104(a) is achieved by removing SO_2 from the combusted fuel gases.

(ii) Any four-hour period during which the average concentration of SO_2, in the gases discharged into the atmosphere from any sulfur recovery plant subject to § 60.104(b) exceeds the level specified in § 60.104(b)(1). If compliance with § 60.104(b) is achieved through the use of an oxidation control system or a reduction control system followed by incineration, or any four-hour period during which the average concentration of H_2S or reduced sulfur compounds in the gases discharged into the atmosphere from any sulfur plant subject to § 60.104(b) exceeds the levels specified in § 60.104(b)(2). If compliance with § 60.104(b) is achieved through the use of reduction control systems not followed by incineration.

3. Section 60.106 is amended by revising paragraphs (c) and (d) as follows:

§ 60.106 Test methods and procedures.

* * * * *

(c) For the purpose of determining compliance with § 60.104(a), Method 11 shall be used to determine the concentration of H_2S and Method 6 shall be used to determine the concentration of SO_2.

(1) If Method 11 is used, the gases sampled shall be introduced into the sampling train at approximately ambient pressure. Where refinery fuel gas lines are operating at pressures substantially above atmospheric, this may be accomplished with a flow control valve. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line. The minimum sampling time shall be 10 minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples of equal sampling time shall constitute one run. Samples shall be taken at approximately 1-hour intervals. For most fuel gases, sample times exceeding 60 minutes may result in depletion of the collecting solution; although fuel gases containing low concentrations of hydrogen sulfide may necessitate sampling for longer periods of time.

(2) If Method 6 is used, Method 1 shall be used for velocity traverses and Method 2 for determining velocity and volumetric flow rate. The sampling site for determining SO_2 concentration by Method 6 shall be the same as for determining volumetric flow rate by Method 2. The sampling point in the duct for determining SO_2 concentration by Method 6 shall be at the centroid of the cross section if the cross sectional area is 5 m^2 (54 ft^2) or less and if the centroid is more than 1 m (39 inches) from the wall; otherwise, the sampling point shall be at a point no closer to the walls than 1 m (39 inches). If the cross sectional area is 5 m^2 or more and the centroid is more than 1 meter from the wall, three sampling points shall be used (the centroid and two points 1 m (39 inches) from the inside wall along the two axes that intersect the centroid). The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be 10 minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples of equal sampling time shall constitute one run. Samples shall be taken at approximately one-hour intervals.

(d) For the purpose of determining compliance with § 60.104(b), Method 6 shall be used to determine the concentration of SO_2, and Method 15 shall be used to determine the concentration of H_2S and reduced sulfur compounds.

(1) If Method 6 is used the procedure outlined in paragraph (c)(2) of this section shall be followed except that each run shall span a minimum of four consecutive hours of continuous sampling. A number of separate samples may be taken for each run provided the total sampling time of these samples adds up to a minimum of four consecutive hours. Where more than one sample is used, the average SO_2 concentration for the run shall be calculated as the time weighted average of the SO_2 concentration for each sample according to the formula:

$$C_A = \sum_{i=1}^{n} C_i \frac{t_i}{t}$$

Where:

C_A = [illegible]

C_i = [illegible]

t_i = [illegible]

t = [illegible]

n = [illegible]

(2) If Method 15 is used, each run shall consist of 16 samples taken over a minimum of four hours. The sampling point shall be at the centroid of the cross section of the duct if the cross sectional area is less than 5 m^2 (54 ft^2), or at a point no closer to the walls than 1 m (39 inches) if the cross sectional area is 5 m^2 or more and the centroid is more than 1 meter from the wall. To insure minimum residence time for the sample inside the sample line, the sample rate shall be at least 3 liters/minute (0.1 ft³/min). The SO_2 equivalent for each run shall be calculated as the arithmetic average of the SO_2 equivalent of each sample during the run. Reference Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 15. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. Each run shall span a minimum of four consecutive hours of continuous sampling. A number of separate samples may be taken for each run provided the total sampling time of these samples adds up to a minimum of four consecutive hours. Where more than one sample is used, the average moisture content for the run shall be calculated as the time weighted average of the moisture content of each sample according to the formula:

$$B_{ws} = \sum_{i=1}^{n} B_{wi} \left[\frac{t_i}{t} \right]$$

Where:

B_{ws} = [illegible]

B_{wi} = [illegible]

t_i = [illegible]

t = [illegible]

n = [illegible]

* * * * *

Appendix A—Reference Methods

4. Appendix A is amended by adding a new reference method as follows:

Method 15—Determination of hydrogen sulfide, carbonyl sulfide, and carbon disulfide emissions from stationary sources

1 Principle and applicability. 1.1 Principle. A gas sample is extracted from the emission source and diluted with inert gas at a fixed ratio. An aliquot of the diluted sample is then analyzed for hydrogen sulfide (H_2S), carbonyl sulfide (COS), and carbon disulfide (CS_2) by gas chromatography (GC) separation and flame photometric (FPD) detection.

1.2 Applicability. This method is applicable for the determination of hydrogen sulfide, carbonyl sulfide, and carbon disulfide emissions as specified by an applicable subpart.

2 Range and sensitivity. 2.1 Range. The maximum limit of the FPD for each sulfur compound is dependent on the sample size. For a 1 ml sample the upper limit is about 10 ppm. It may be necessary to dilute gas samples from sulfur recovery plants burning fuel rich acid gas, resulting in an upper limit of about 1000 ppm for each compound.

2.2 The minimum detectable concentration of the FPD is also dependent on sample size and would be about 0.5 ppm for a 1 ml sample.

3 Interferences. 3.1 Moisture Condensation. Moisture condensation in the sample delivery system, the analytical column, or the FPD burner block can cause losses or interference. This potential is minimized by heating the sample line and by conditioning the sample with dry diluent air to lower the dew point below the operating temperature of the GC. Per cent moisture should be measured.

3.2 Carbon Monoxide and Carbon Dioxide. CO and CO_2 can cause a concentration dependent negative response on the detector even after 10:1 dilution. This potential interference is eliminated by cooling the sample to -78°C (-108°F) prior to dilution of any sulfur components.

3.3 Elemental Sulfur. The concentration of sulfur vapor in the sampling line can lead to analytical scrubbing and even blockage of the sample line. This problem can be eliminated along with the moisture problem by heating the sample line.

4 Precision. 4.1 Calibration Precision. A series of three consecutive injections of the same calibration gas at any dilution ratio used should agree within 5% of their mean value. Calibration precision should be checked each day that analyses are performed.

6.6 Calibration drift. The calibration drift determined from the zeros and spans taken at the beginning and end of any 8 hour period should not exceed 2.0%.

7. Sampler apparatus. 7.1.1 Sample probe. The sample probe should be fabricated from a suitable length and diameter of stainless steel tubing.

7.1.2 Sample line—0.95 cm (0.38 inch) inside diameter Teflon[1] tubing heated to 120° C. This temperature is controlled by a thermostatic heater.

7.1.3 Sample pump—Stainless Teflon coated diaphragm type or equivalent. The pump head is heated to 120° C by enclosing it in the sample dilution box (7.2.4 below).

[1] Mention of trade names or specific products does not constitute an endorsement by the Environmental Protection Agency.

7.2 Dilution system. A schematic diagram of the dynamic dilution system is given in Figure 10-1. The dilution system is constructed such that all sample contact surfaces are made of inert materials. The dilution system which is heated to 120° C must be capable of a minimum of 10:1 dilution of sample. Components used in the dilution system is listed below.

7.2.1 Dilution pump—Model A 150 Gast/Bomber Teflon positive displacement type, or equivalent pump capable of 2.0 l/min, adjustable to 0.2 l/min, or equivalent per dilution stage. A 10:1 dilution of sample is accomplished by combining 100 cc of sample with 1000 cc of clean dry air as shown in Figure 10-1.

7.2.2 Valves—Three-way Teflon solenoid or equivalent type.

7.2.3 Tubing—Teflon tubing and fittings are used throughout from the sample probe to the DC FFID to present an inert surface to sample gas.

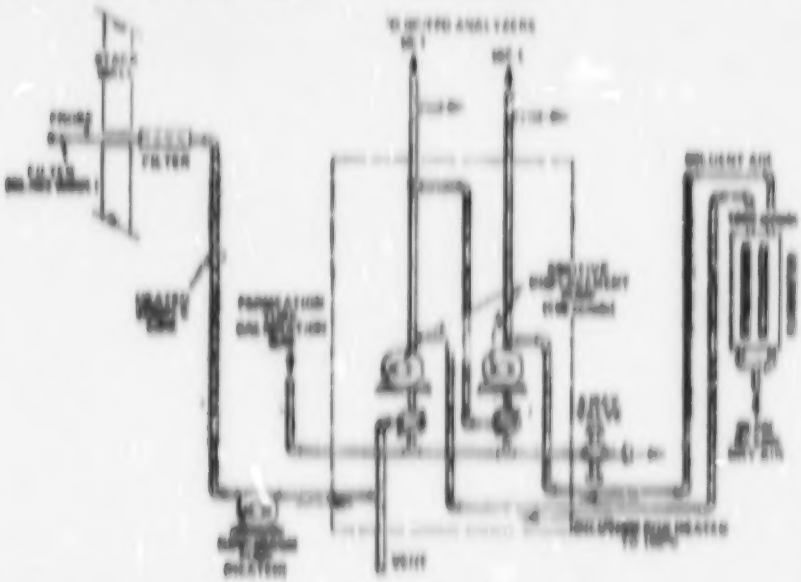

Figure 10-1. Sampling and Dilution Apparatus

7.2.4 Box—Insulated box, heated and maintained at 120° C or equivalent, capable of housing the dilution apparatus.

7.2.5 Flowmeters—Rotameters, or equivalent, to measure flow rates of 0 to 1 cfm air and 0 to 200 cc/min sample.

7.3 Fuel and chromatographs.

7.3.1 Fuel—[illegible] mixture of 40% hydrogen and 60% helium or 40% hydrogen and 60% nitrogen, mixed with discriminated ultra pure air (certified).

7.3.2 Pressure valve—Teflon two port, two position valve equipped with a 10 cc sample loop, actuated by compressed air (Figure 10-2).

7.3.3 Oven—For containing sample valve, sample valves and separation columns. The oven should be capable of maintaining an ultra pure temperature ranging from ambient to 150° C, accurate within ± 1° C.

7.3.4 Temperature indicator—Thermocouple potentiometer to measure column oven, detector, and exhaust temperature ± 1° C.

7.3.5 Flow system—Gas metering system to measure sample, fuel, hydrogen, helium, oxygen, zero air, and standard carrier gas flow.

7.3.6 Detector—Flame photometric detector.

7.4.1 Recorder—Capable of full scale amplification of those ranges of 10 mV to 100 millivolts full scale.

7.4.2 Power supply—Capable of delivering up to 750 volts.

7.4.3 Recorder—Compatible with the output voltage range of the electrometer.

7.5 Calibration. Calibration valve system (Figure 10-3).

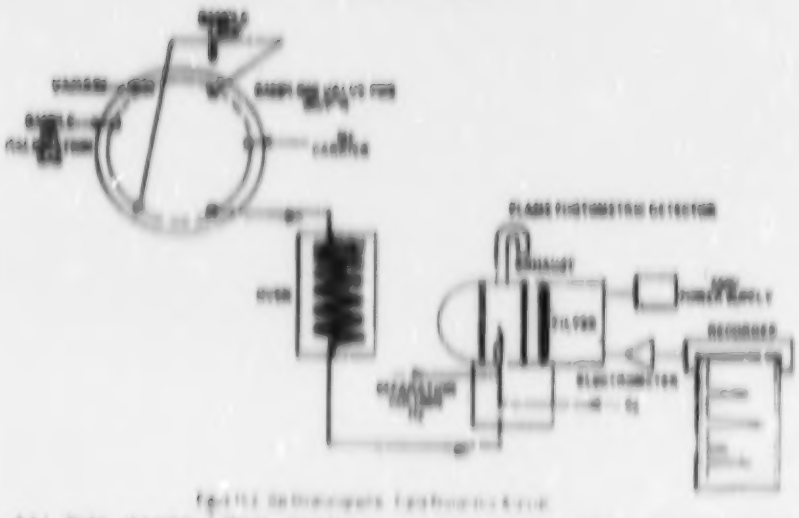

Figure 1. Schematic of Permeation System

6.4.1 Flow chamber. Glass chamber or equivalent dimensions to divide permeation tubes.

6.4.2 Mass flowmeters. Two mass flowmeters in the range of 0.0 1/min and 0.1 to 1 l/min to regulate air flow over permeation tubes at 0°C. These flowmeters shall be cross-calibrated at the beginning of each test with a bubble calibrator and shall be adjusted whenever readings do not agree within 2 percent.

6.4.3 Constant temperature bath. Capable of maintaining permeation tubes at constant temperature at 30° C within ±0.1° C.

6.4.4 Temperature monitor. Thermometer or equivalent to monitor bath temperature within ±0.1° C.

6.5 Reagents. 6.5.1 Pure Hydrogen (H_2) prepurified grade or better.

6.5.2 Oxidation Gas Oxygen (O_2) prepurified grade or better.

6.5.3 Carrier Gas Nitrogen (N_2) prepurified grade or better.

6.5.4 Diluent. Air containing less than 0.5 ppm total sulfur compounds and less than 10 ppm each of moisture and total hydrocarbons, and diluted with a mass airflow meter and shall be calibrated. Removal of sulfur compounds can be carried by injecting dilution air only described in Section 6.1.

6.6 Compressed Air. As req for the zero calibration.

6.7 Calibration Gases. Permeation tubes gravimetrically calibrated and certified at 30° C.

7. On test procedures. 7.1 After the complete measurement system has been set up at the site and verified to be operational and functioning properly shall be completed before sampling is initiated.

7.1.1 Flowmeter calibration and leak test. Appropriate calibration and leak test procedures shall be employed to verify the accuracy and/or integrity of all flowmeters, sample lines and connections. Pay special care under negative pressure lines and connections upstream of the sample pump. A leak test is performed using the sample pump to pull a vacuum. Attach the probe end of the sample line to a manometer or vacuum gauge, start the pump and pull greater than 50 mm (2 in.) Hg vacuum. Close off the pump no for then stop the pump and ascertain that there is no leak for 1 minute. For components subject to positive pressure, leak tests shall be performed at each point by applying a liquid detergent in water, for example) which will foam in the presence of a leak.

Since the complete dilution system and the PPS is calibrated prior to and following each test, the precise calibration of each component is not critical. However, these components should be verified to be operating properly. This verification can be performed by observing the response of flowmeters or of the SO2 output to changes in flow rates or calibration gas concentrations and ascertaining if a response to be within predicted limits if any component or if the complete system fails to respond in a normal and predictable manner, the source of the discrepancy shall be identified and corrected before proceeding.

7.1.2 Mass flowmeter calibration. Since all sample calculations are based on the accuracy of air flows measured by the mass flowmeters, it is essential that the proper calibration check of Section 6.4.3 be followed.

7.1.3 Prior to any sampling run, calibrate the system using the procedures set forth in Section 8. If more than one run is performed during any 24 hour period, a calibration need not be performed prior to the second and subsequent runs. The calibration must, however, be carried as prescribed in Section 8 after the last run and within the 24 hour period.

8. Calibration. 8.1 General Considerations. This section outlines steps to be followed for use of the SO2 PPS and the dilution system. The procedure does not include detailed instructions because operation of these systems is complex and it requires an understanding of the individual system being used. Each system should include a written operating manual describing in detail the operating principles associated with each component in the measurement system. In addition, the operator should be familiar with the operating principles of the major components, particularly the SO2 PPS. The reference cited at the end of this method are recommended for review for this purpose.

8.2 Permeation Tubes. Follow the following procedure accurately. Known concentrations (0.1 to 1 ppm) of a variety of sulfur compounds are generated by passing clean dry air at some constant rate over a specific sulfur compound at a constant temperature. These tubes consist of hermetically sealed FEP Teflon tubing in which a liquid and gaseous substance is enclosed. The contained gas permeates through the tubing wall

at a constant rate. When the temperature is stabilized, calibration gases covering a wide range of known concentrations can be generated by stirring and accurately measuring the flow rate of diluent gas passing over the tubes. These calibration gases are used to calibrate the GC/PFPD system and the dilution system.

9.3 Calibration Procedure. Assemble the permeation tube calibration apparatus as described in Figure 10.3 (insert GC permeation tubes into the glass tube chamber (check for leak) temperature to assure agreement with the calibration temperature of the tubes within ±0.1°C. A temperature of 30°C is recommended for the sulfur gas tubes. Allow several hours for the tubes to equilibrate. When equilibrated, vary the flow rate of diluent air flowing over the tubes to produce the desired concentrations for calibrating the sampling and analysis systems. The air flow across the tubes must be sufficient to meet the flow requirement of the analytical systems. The concentration in parts per million generated by a tube containing a specific component can be calculated as follows:

Equation 10-1

$$C = A \frac{P_1}{Q_1}$$

Where:

C = Concentration of permeant compound in ppm

P_1 = Permeation rate of the tube in μg/min

A = Molecular weight of the component $\left(\frac{g}{g\ mole}\right)$

Q_1 = Flow rate (liters/min) of air over permeant (liters/min)

K = conversion factor for μg and liters to ppm $\left(\frac{24.45}{g\ mole}\right)$

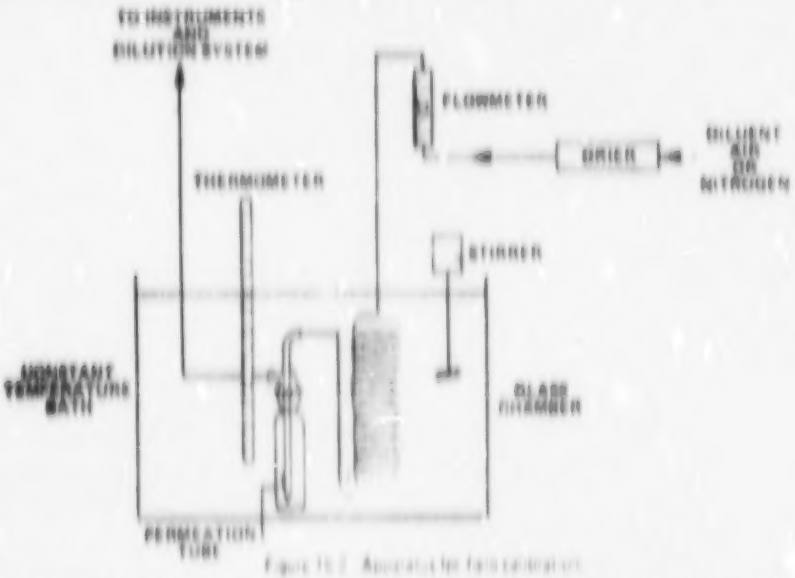

Figure 10-3 Apparatus for Calibration

9.4 Operating Conditions for GC/PFPD System. The operating parameters for the GC/PFPD system are as follows: nitrogen carrier gas flow rate of 100 cc/minute; exhaust temperature of 110° C; detector temperature of 165° C; oven temperature of 40° C; hydrogen flow rate of 80 cc/minute; oxygen flow rate of 20 cc/minute and sample flow rate of 80 cc/minute.

9.5 Calibration of GC/PFPD Analysis System. Generate a series of three or more known concentrations spanning the linear range of the PFPD (approximately 0.05 to 1.0 ppm) for each sulfur compound anticipated to be present in the gas stream analyzed. Bypassing the dilution system, inject these standards into the GC/PFPD analyzers and monitor the responses. Three injects for each concentration must yield the precision described in Section 9.1. Failure to attain this precision is an indication of a problem in the calibration or analytical system. Any such problem must be identified and corrected before proceeding. Peak heights rather than integrated areas have proven satisfactory, however, integrated areas may be required for alternate columns or instrumentation.

9.6 Calibration Curves. Plot the GC/PFPD responses (in current (amperes)) versus their respective concentrations in ppm on log-log coordinate graph paper for each sulfur compound calibrated.

9.7 Calibration of Dilution System. Generate a known concentration of hydrogen sulfide using the permeation tube system. Adjust the flow rate of diluent air for the first dilution stage so that the desired level of dilution is approximated. Inject the diluted calibration gas into the GC/PFPD and monitor the response. Three injects for each dilution must yield the precision described in Section 9.1. Failure to attain this precision is an indication of a problem in the dilution system. Any such problem must be identified and corrected before proceeding. Using the calibration curve for H_2S (developed under 9.6.1), determine the diluted calibration gas concentration in ppm. Then calculate the dilution factor as the ratio of the calibration gas concentration before dilution to the diluted calibration gas concentration determined under this paragraph. Repeat this procedure for each stage of dilution required.

9.8 Sampling and analysis procedure.

9.8.1 Sampling. Insert the sampling probe into the test port, making certain that no dilution air enters the stack through the port. Begin sampling and dilute the sample approximately 10:1 using the dilution system shown in Figure 10-1. Note that the precise dilution factor is that which is determined in paragraph 9.7. Condition the entire system with sample for a minimum of 15 minutes prior to commencing analysis.

9.8.2 Analysis. The sample valve is activated for one minute, in which time an aliquot of diluted sample is injected into separation column. The rate is then increased for the remainder of the analysis cycle to shorten the sample loop is refilled and the next analysis initiated. The dilution time for each component will be determined during calibration.

9.9 Sample Run. A minimum of one analysis (injection) shall be made during each test run (see procedure).

10.1 Recalibration. After each run, or after a series of runs made within a 24-hour period, perform a partial recalibration using the procedures of Section 9. Only H_2S (or other permeant) need be used to recalibrate the GC/PFPD analysis system (9.6) and the dilution system (9.7).

10.2 Determination of Calibration Drift. Compare the calibration curves obtained prior to the runs to the calibration curves obtained under paragraph 10.1. The calibration drift must not exceed the limits set forth in paragraph 9.2. If the drift exceeds this limit, the intervening run or runs shall be considered not valid.

11 Calculations.

11.1 Determine the concentrations of hydrogen sulfide, carbonyl sulfide and carbon disulfide detected in each sample directly from the calibration curves.

11.2 Sulfur Dioxide Equivalent. For each sample the concentrations of hydrogen sulfide, carbonyl sulfide and carbon disulfide are totaled and the sum expressed as sulfur dioxide using the following equation.

SO_2 equivalent = $(H_2S) + (COS) + (CS_2)$

SO_2 equivalent = The sum of the concentration of each of the measured compounds (H_2S, COS, CS_2) expressed as sulfur dioxide, in ppm.

(H_2S) = Measured concentration of hydrogen sulfide, in ppm.

(COS) = Measured concentration of carbonyl sulfide, in ppm.

(CS_2) = Measured concentration of CS_2, in ppm.

12 Bibliography.

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12.6 Merriman, C. R., "Improved Chromatographic Techniques for Sulfur Pollutants," presented at the Joint Conference on Recent Trends in Environmental Pollutants, Palo Alto, California, November 8-10, 1971.

12.7 General Reference: Standard Methods of Chemical Analysis, Volume III A and B "Instrumental Methods," Sixth Edition, Van Nostrand Reinhold Co.

[FR Doc 72-2871 Filed 10-1-72; 8:45 am]

ENVIRONMENTAL PROTECTION AGENCY

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BASIC OXYGEN PROCESS FURNACES

Standards of Performance For New Stationary Sources

SUBPART N

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 694-5]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Iron and Steel Plants; Basic Oxygen Process Furnaces

Notice is hereby given that under sections 111, 114, and 301 of the Clean Air Act, as amended, the Administrator is proposing amendments to the standards of performance for basic oxygen process furnaces (BOPF).

SUMMARY OF PROPOSED AMENDMENTS

The proposed amendments to the standards of performance for BOPF facilities would limit the opacity of emissions from the control device, require monitoring of operations of the control device, and clarify the term "startup" as it applies to BOPF facilities. Compliance with the proposed opacity limits would be determined by conducting observations in accordance with Reference Method 9. The continuous monitoring of operations is specific to venturi scrubber emission control equipment because all presently planned facilities will be controlled by venturi scrubbers. The proposed monitoring provisions require continuous monitoring of the pressure loss across the throat of the scrubber and the water supply pressure to the scrubber. As the provisions of 40 CFR 60.11(d) apply to BOPF facilities, "startup" means the setting into operation of a BOPF which has been out of production for a continuous time period of eight hours or the setting into operation of a relined BOPF.

BACKGROUND

On June 11, 1973 (38 FR 15406), the Administrator proposed as Subpart N to 40 CFR Part 60 standards of performance for new basic oxygen process furnaces (BOPFs). The proposed standards limited particulate matter emissions to no more than 50 mg/dscm (0.022 gr/dscf) and to less than 10 percent opacity except for two minutes in any one hour. Commenters on the proposed standards pointed out the inappropriateness of the two minutes per hour exemption for the cyclic steel production process and the unachievability of the level of the proposed opacity standard. Evaluation of the comments on the proposed standard led EPA to conclude that further study was required for development of adequate provisions. On March 8, 1974 (39 FR 9308), the Administrator promulgated the standard of performance limiting emissions from new BOPFs to less than 50 mg/dscm; however, the opacity standard and the attendant continuous monitoring requirement were not promulgated at that time. The opacity standard was reserved pending study of (1) the reasons for the observed variations in the opacity of emissions from well-controlled facilities and (2) the effect that exempting periods of startup, shutdown, and malfunction from applicability of opacity standards would have on the level of the opacity standard and the need for a time exemption.

On November 12, 1975 (40 FR 53346), EPA revised Reference Method 9 and the general provisions applicable to opacity standards of performance. Reference Method 9, the method for determining compliance with opacity standards, was revised to require that opacity observations be recorded at 15-second intervals with a minimum of 24 observations (six minutes) to obtain sufficient observations to ensure acceptable accuracy. The use of sets of opacity observations (six minute average opacity values) precludes a single high reading from being considered a violation. In addition, § 60.11(e) was added to the general provisions to provide a means for an owner or operator to petition EPA to obtain a higher opacity standard for any facility that demonstrates compliance with the mass standard concurrent with failure to achieve the opacity standard. Section 60.11(e) allows opacity standards to be established at levels which reflect the maximum expected effects of the normal range of operating variables and stack diameters at well-controlled new facilities.

In light of the Method 9 revisions and the questions on the appropriate emission limitation and format for the opacity standard, additional opacity data were obtained and the bases and rationale for an opacity standard for BOPFs were thoroughly reevaluated. The reevaluation included consideration of the effects on opacity of process variations, of variations in performance characteristics of control devices, and of definition of startup periods for BOPFs. The proposed opacity standards are established at levels which are achievable by well-maintained and properly operated control equipment capable of reducing emissions to the level of the concentration standard, 50 mg/dscm (0.022 gr/dscf). Copies of the report on the data bases and rationale for the proposed opacity standard may be obtained upon written request from the EPA Public Information Center (PM-213), Environmental Protection Agency, Washington, D.C. 20460 (specify Background Information for an Opacity Standard of Performance for Basic Oxygen Process Furnaces in Iron and Steel Plants).

ENVIRONMENTAL AND INFLATIONARY IMPACT

Opacity standards are set at levels which ensure proper operation and maintenance of the control system, but which do not require use of a more efficient system. The opacity standards and the continuous monitoring requirements proposed herein do not impose any additional significant requirements or costs over those required to comply with the concentration standard. Therefore, this proposal is not considered a major action under the Inflationary Impact Statement (IIS) program and no IIS is required. The environmental impacts of the standards of performance for BOPFs also are incurred in complying with the concentration standard. During the development of the concentration standard, the intermedia effects of the standard were assessed and determined to be negligible. No additional intermedia effects would be incurred in complying with opacity standards for BOPFs. Therefore, a formal environmental impact statement has not been prepared. The environmental impact of the proposed opacity standards is beneficial as the standards would ensure compliance of new BOPFs with the concentration standard throughout their operational life.

DATA BASE FOR A STANDARD

The standard of performance limits emissions from all new basic oxygen process furnaces to less than 50 mg/dscm (0.02 gr/dscm). Emissions from basic oxygen process furnaces can be controlled to this level by use of a well-designed and operated high energy venturi scrubber or an electrostatic precipitator. In the development of an opacity standard for BOPFs, opacity observations were conducted at six facilities according to the procedures of Method 9 (39 FR 39872). Because of a known difference between the particle size distributions and hence light scattering properties of emissions from bottom blown BOPFs and top blown BOPFs, the opacity of emissions from both type furnaces were investigated in the background study on a standard.

The facilities observed in the study were representative of several control levels based on available particulate matter emission data and an engineering judgement of the current condition of the control system. The condition of the control system was assessed on the basis of review of operating parameters, design parameters, and maintenance condition of the control system. From the observation of six facilities it was noted that higher emissions occurred at the beginning of the steel production cycle for both types of control systems. The higher opacity emissions are attributable to the greater evolution rate of particulate matter and the lower gas temperature at the start of the oxygen blow as well as a lag in the response of the control device. For scrubber-controlled top or bottom blown BOPFs, the six minute average opacity levels observed at the start of oxygen blow were less than 20 percent and the six minute average opacity levels during the remainder of the cycle were less than 10 percent opacity. Electrostatic precipitator controlled facilities exhibited opacity levels less than 10 percent during the start of oxygen blow and levels less than 15 percent during the remainder of the cycle. The difference between the opacity levels observed for the two types of control systems primarily reflects differences in diameter of the larger stacks rather than significant differences in the performance.

RATIONALE FOR THE PROPOSED STANDARD

Section 111 of the Act requires EPA to set emission standards which reflect "the degree of emission limitation achievable through application of the best system of emission reduction which (taking into account the cost of achieving such re-

duction; the Administrator determines has been adequately demonstrated. The standards of performance requires an owner or operator to conduct a performance test after the initial startup of an affected facility to ensure that the control system was properly designed and installed. Section 111(e) of the Act requires that new sources continue to be in compliance with the standards throughout their operational life. Opacity standards are established in conjunction with mass or concentration standards as a means of ensuring that control equipment is adequately maintained and properly operated at all times between performance tests.

In EPA's judgment, the opacity levels associated with well-designed and operated facilities differed by type of control system due to design features. The rationale for selection of the emission limitation for the standard required consideration of whether the level would ensure proper operation and maintenance of all facilities. In the development of the proposed standard EPA considered several alternative regulatory approaches. The alternatives considered included opacity levels based on data from electrostatic precipitator-controlled facilities, separate opacity limitations for electrostatic precipitator-controlled and scrubber-controlled facilities and an opacity level based on data from scrubber-controlled facilities. An opacity standard based on performance of electrostatic precipitator-controlled systems was not selected because the standard would not require proper operation and maintenance of venturi scrubber-controlled facilities. In addition, the steel industry currently has no plans for the construction of any new electrostatic precipitator-controlled BOPF facilities; thus this standard would not accomplish its intended purpose. Setting separate opacity standards for the two control systems was also rejected because only one of the control systems is expected to be used. Thus the proposed opacity standard is based on the performance of scrubber-controlled facilities. Should any affected BOPF be controlled with an electrostatic precipitator and comply with the particulate limit of 50 mg dscm but not the opacity limits, a separate opacity limit would be established for that facility under 40 CFR 60.11(e). The provisions of 40 CFR 60.11(e) allow owners or operators of sources which exceed the opacity standard while concurrently achieving the concentration standard to request establishment of a specific opacity standard for that facility.

The proposed standard would limit mass opacity which occurs at the beginning of the cycle and the opacity over the remainder of the cycle. The opacity limit for the beginning of the cycle is necessary because of the increased particulate loading and gas density at the startup of the operation. Emissions during the period of startup of the production cycle are not excluded from the opacity standard as a "startup" under the provisions of 40 CFR 60.11(c) because emissions during this period are subject to the concentration standard and are controllable.

The proposed standard would limit emissions during the beginning of the production cycle to less than 20 percent opacity and emissions over the remainder of the cycle to less than 10 percent opacity. To simplify enforcement, the opacity standard would allow the period of higher opacity emissions to commence per steel production cycle. Restriction of the higher opacity emission period to the beginning of the production cycle would require the observer to synchronize observations with shop operations. In addition, the proposed standard could be enforced more readily at facilities with several furnaces ducted to a single common control system.

Standards of performance for new sources established under section 111 of the Clean Air Act reflect emission limits achievable with the best adequately demonstrated systems of emission reduction (considering the cost of such systems). State implementation plans (SIP's) approved or promulgated under section 110 of the Act, on the other hand, must provide for the attainment and maintenance of national ambient air quality standards (NAAQS) designed to protect public health and welfare. For that purpose SIPs must in some cases require greater emission reductions than those required by standards of performance for new sources. In addition, States are free under section 116 of the Act to establish more stringent emission limits than those established under section 111 or those necessary to attain or maintain the NAAQS under section 110. Thus, new and existing sources may in some cases be subject to limitations more stringent than EPA's standards of performance under section 111.

Public Participation

In accordance with section 117(f) of the Act, publication of these proposed amendments to 40 CFR Part 60 was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies. Interested persons may participate in this rulemaking by submitting written comments (in triplicate) to the Emission Standards and Engineering Division, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin. Comments on all aspects of the proposed amendments to the regulation are welcome, including economic and technological issues. All comments received not later than May 2, 1977, will be considered. Comments received will be available for public inspection at the EPA Public Information Reference Unit (EPA Library, Room 2922, 401 M Street, SW., Washington, D.C. 20460).

(Sec. 111, 116, 301(a), Clean Air Act, as amended, (42 U.S.C. 1857c-6, 1857g-1(a)).)

NOTE.—The Environmental Protection Agency has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11949.

Dated: February 23, 1977.

Jane Yarbles,
Acting Administrator.

It is proposed to amend Part 60 of Chapter I, Title 40 of the Code of Federal Regulations as follows:

1. The table of sections is amended by revising Subpart N as follows:

Subpart N—Standards of Performance for Iron and Steel Plants

* * * * *

Sec.
60.143 Monitoring of operations.

* * * * *

2. Section 60.2 is amended by adding a new abbreviation as follows:

§ 60.2 Abbreviations.

* * * * *

Pa = pascal.

* * * * *

Subpart N—Standards of Performance for Iron and Steel Plants

3. Section 60.142 is amended by adding paragraph (a)(2) and (b) as follows:

§ 60.142 Standard for particulate matter.

(a) * * *

* * * * *

(2) Exit from a control device and exhibit 10 percent opacity or greater, except that an opacity of greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(b) For purposes of this subpart, "startup" means the setting into operation of a BOPF which has been out of production for a minimum continuous time period of eight hours or the setting into operation of a relined BOPF.

4. A new § 60.143 is added as follows:

§ 60.143 Monitoring of operations.

(a) The owner or operator of an affected facility shall maintain daily records of the time and duration of each steel production cycle.

(b) The owner or operator of any affected facility that uses venturi scrubber emission control equipment shall install, calibrate, maintain, and continuously operate the following monitoring devices:

(1) A monitoring device for the continuous measurement of the pressure loss through the venturi construction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±250 Pa (±1 inch water).

(2) A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of the design water supply pressure. The pressure sensor or tap must be located close to the water discharge point. The Administrator may be consulted for approval of alternative locations for the pressure sensor or tap.

(c) All monitoring devices required under paragraph (b) of this section are

be to recalibrate annually, and at other times as the Administrator may require, in accordance with the procedures under § 60.13(b)(5).

(d) Any owner or operator subject to requirements under paragraph (b) of this section shall report for each calendar quarter all measurement results that are more than 10 percent below the average levels maintained during the most recent performance test conducted under § 60.8 which the affected facility demonstrated compliance with the standard under § 60.142(a)(1). The accuracy of the respective measurements, not to exceed the values specified in paragraphs (b)(1) and (b)(2) of this section, must be taken into consideration when determining the measurement results that must be reported.

(Secs. 111, 114, 301(a), Clean Air Act as amended, Pub. L. 91-604, 84 Stat. 1676 (42 U.S.C. 1857c-6, 1857c-9, 1857g(a)).)

[FR Doc 77-6962 Filed 3-1-77;8:45 am]

ENVIRONMENTAL PROTECTION AGENCY

IN

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

SEWAGE TREATMENT PLANTS

SUBPART O

ENVIRONMENTAL PROTECTION AGENCY

[FRL 839-1]

[40 CFR Part 60]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Sewage Sludge Incinerators

Subpart O sets forth standards of performance for new, modified, and reconstructed sewage sludge incinerators at sewage treatment plants. The standard limit emissions of particulate matter to 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input) and visible emissions to 20 percent opacity. The State of Alaska recently requested EPA to revise § 60.150 of the regulation. The basis of the request is that incinerators which are small enough to meet the needs of small communities in Alaska and also comply with the particulate matter standard are not available, and the disposal of sewage sludge by landfill is not a viable option because of permafrost and other factors resulting in landfill problems (shallow and soft landfills). The proposed amendment would exempt incinerators with a capacity of less than 140 kg/hr (300 lb/hr) dry sludge provided that disposal by land application or sanitary landfill are shown to be infeasible because of freezing conditions.

Background

The standards of performance for sewage sludge incinerators were promulgated March 8, 1974 (39 FR 9308), under Section 111 of the Clean Air Act. Section 111 directs the Administrator to establish standards of performance for new stationary sources which reflect the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated. The best system of emission reduction for sewage sludge incinerators (multiple hearth and fluid bed reactor type incinerators) was determined to be low energy venturi scrubbers.

At the time the standards were promulgated EPA was developing a standard for mercury emissions from sewage sludge incinerators and guidelines for municipal sludge management. The standard limiting mercury emissions was promulgated under section 112 (Hazardous Air Pollutants) of the Clean Air Act on October 14, 1975 (40 FR 48307), and the proposed guideline was issued for public comment on June 6, 1976 under the title "Technical Bulletin on Municipal Sludge Management: Environmental Factors."

Incineration is just one of several methods available for sludge disposal. The standards which limit emissions of mercury and particulate matter insure that adequate emission control systems are employed when incineration is used as the method of sludge disposal. Incineration is only a volume reduction method. After incineration, the ash, either dry or in scrubber water, remains to be disposed of in the land. Ash disposal must be designed to protect ground water to prevent dust, and to insure no erosion to surface water.

Investigation

In investigating Alaska's request, EPA contacted the vendors of sewage sludge incinerators and found that multiple hearth or fluid bed reactor type incinerators which can achieve the particulate matter standard are not commercially available below a size capacity of 140 kg/hr (300 lb/hr). This means that incineration would not be a disposal option where units smaller than 140 kg/hr are needed. Since the unique problems in parts of Alaska also prevent disposal by land application or sanitary landfill, sludge disposal cannot be accomplished in an environmentally acceptable manner under existing regulations. EPA concluded that a revision to the standards of performance for sludge incinerators is appropriate.

In developing a revision to the standard to accommodate the unique problems in parts of Alaska, EPA intends that the proposed exemption not create an incentive to utilize small incinerators which would not be covered under the standard. To avoid this situation the proposed exemption applies only where an owner or operator can demonstrate to the satisfaction of the Administrator that land application and sanitary landfills are not feasible disposal methods for the sewage sludge. The size exemption is based on the capacity of the waste water treatment plant rather than the incinerator in order to prevent constructing multiple small incinerators rather than larger units which would be subject to the standard.

The proposed amendment of § 60.150 would not affect applicable national mercury emission standards under § 61.50 which currently regulates mercury emissions from all sludge incinerators. These standards are not subject to the exemption because control of mercury emissions can be achieved by ordinances or statutes which prevent mercury-bearing material from being introduced into the municipal waste treatment system.

Public Participation

Interested persons may participate in this proposed rulemaking by submitting written comments (in triplicate) to the Emission Standards and Engineering Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin. Comments on all aspects of the proposed revision are welcome. All relevant comments received but later than March 15, 1977 will be considered. Comments received will be available for public inspection and copying at the EPA Public Information Reference Unit, Room 2922 (EPA Library), 401 M Street, S.W., Washington, D.C. 20460.

Authority: Sections 111, 114 and 301(a) of the Clean Air Act, as amended by sec. 4(a) of Pub. L. 91-604, 84 Stat. 1678; sec. 4 of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-6, 1857c-9 and 1857g(a)).

Dated: January 14, 1977.

Russell E. Train,
Administrator.

It is proposed to amend Subpart O, by revising § 60.150 as follows:

§ 60.150 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each incinerator which combusts the sludge produced by municipal sewage treatment plants except as provided under paragraph (b) of this section.

(b) The owner or operator of a sewage sludge incinerator may apply to the Administrator for an exemption to the requirements of this subpart for any sewage sludge incinerator that is at a municipal waste treatment plant having a dry sludge capacity below 140 kg/hr (300 lb/hr). The Administrator will grant an exemption provided the owner or operator demonstrates to the Administrator's satisfaction that it is not feasible to dispose of the sludge by land application or in a sanitary landfill because of freezing conditions. For the purpose of determining the capacity of a municipal waste treatment plant under this paragraph, the dry sludge capacity of the municipal waste treatment plant is the dry sludge capacity of the sewage sludge incinerator, whichever is greater.

[FR Doc 77-2084 Filed 1-20-77 8:45 am]

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 680-5]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Sewage Treatment Plants; Correction

On January 28, 1977 (42 FR 4862), EPA published a proposed amendment to Subpart O of 40 CFR Part 60. By this notice EPA makes certain administrative changes to the proposed amendment and requests that interested persons comment on the amendment as published here rather than as published on January 28, 1977. The amendment proposed here retains the exemption for any municipal sewage sludge incinerator which is located at a municipal waste treatment plant having a dry sludge capacity below 180 kg/hr (396 lb/hr) and where it is not feasible to dispose of the sludge by land application or in a sanitary landfill because of freezing conditions. However, the amendment proposed here does not require the owner or operator to demonstrate to the satisfaction of the Administrator that such conditions exist, as was required by the amendment proposed on January 28. Rather, the procedures already established under 40 CFR 60.5 and 60.6 are available for an owner or operator of a sewage sludge incinerator to request an EPA determination of whether such an incinerator is an affected facility under these regulations.

Comments on the proposed amendment published here will be due on March 14, 1977 which is the same due date as for the amendment published on January 28, 1977.

(Secs. 111, 114, 301(a), Clean Air Act as amended, Pub. L. 91-604, 84 Stat. 1676, 1713 (42 U.S.C. 1857c-6, 1857c-9, 1857g(a)).)

In 40 CFR Part 60, it is proposed to amend Subpart O by revising § 60.150 as follows:

§ 60.150 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each incinerator which combusts the sludge produced by municipal sewage treatment plants except any such incinerator which is located at a municipal waste treatment plant having a dry sludge capacity below 180 kg/hr (396 lb/hr) and where it is not feasible to dispose of the sludge by land application or in a sanitary landfill because of freezing conditions.

(b) For the purpose of determining the capacity of a municipal waste treatment plant under this paragraph, the dry sludge capacity of the municipal waste treatment plant or the dry sludge capacity of the sewage sludge incinerator, whichever is greater, is used.

* * * * *

(Secs. 111, 114, 301(a), Clean Air Act as amended, Pub. L. 91-604, 84 Stat. 1676, 1713 (42 U.S.C. 1857c-6, 1857c-9, 1857g(a)).)

Dated: February 11, 1977.

Edward F. Tuerk,
Acting Assistant Administrator for Air and Waste Management.

[FR Doc. 77-4618 Filed 2-17-77; 8:45 am]

ENVIRONMENTAL PROTECTION AGENCY

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STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Kraft Pulp Mills

SUBPART BB

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 555-5]

KRAFT PULP MILLS

Standards of Performance for New Stationary Sources

Notice is hereby given that under the authority of section 111 of the Clean Air Act, as amended, the Administrator is proposing standards of performance for new and modified kraft pulp mills. The Administrator also is proposing to amend Appendix A, Reference Methods, in Part 60 by adding a reference method for the measurement of total reduced sulfur (TRS) emissions and an alternate method for the measurement of particulate matter.

Public Hearings

The proposed standards would limit emissions of particulate matter from three affected facilities at kraft pulp mills. The limits are: (1) 0.10 gram per dry standard cubic meter (g dscm) for recovery furnaces, (2) 0.1 gram per kilogram of air-dried pulp (g/kg ADP) for lime slaking, and (3) 0.15 g dscm for lime kilns when burning natural gas and 0.30 g dscm for lime kilns when burning oil or coal. Visible emissions from recovery furnaces would be limited to 35 percent opacity.

Under the proposed standards, TRS emissions would be limited to 5 parts per million (ppm) by volume from seven affected facilities. Digester systems, brown stock washer systems, multiple-effect evaporator systems, black liquor oxidation systems, recovery furnaces, lime kilns and condensate stripper systems. In addition, a TRS standard of 0.033 g/kg ADP is proposed for smelt dissolving tanks.

Environmental Impact

The proposed standards would reduce particulate emissions from new kraft pulp mills more than 99 percent below the levels that would result from no control and more than 70 percent below the average levels that are being achieved by typical existing facilities in the United States. Emissions of TRS would be reduced by more than 93 percent below the uncontrolled levels and more than 50 percent below the average levels for existing mills.

TRS emissions from kraft pulp mills are extremely odorous and there are numerous instances of poorly controlled kraft pulp mills creating public odor problems. The proposed standards mitigate limitations on TRS emissions, rather than on the intensity of odors produced by kraft pulp mills because this course of action would ensure more objective and efficient enforcement. The proposed standards would prevent odor problems from most newly constructed kraft pulp mills, except in the immediate vicinity of the mills on occasions when meteorological conditions produce downwash of stack plumes. The proposed standards would substantially reduce ground level ambient air concentrations of particulate matter around new kraft pulp mills below current levels found around existing mills.

The secondary environmental impact of the proposed standards would be minor. No additional solid waste handling or disposal problems would be caused by the standards because the additional particulate matter collected from recovery furnace systems, smelt dissolving tanks, and lime kilns can be recycled to the kraft pulping process. Increased water demand and treatment would be slight because mill process water can be used in scrubbing systems for lime kilns and smelt dissolving tanks, and the scrubbing system effluent could be recirculated to the kraft pulping process with an increased effluent. The increased mud washing necessitated by the standard could increase water demand. A relatively small amount of particulate matter, sulfur dioxide, and nitrogen oxides would be discharged into the air if the power plant that supplies the additional electrical power required by the standards is fired with fossil fuel.

Energy Impact

The energy requirements of the proposed standards have been evaluated. Compared to the requirements of the average State standards, the incremental energy that would be required to control all new, modified, and replaced affected facilities at kraft pulp mills by 1981 has been estimated at an equivalent of about 1,400,000 barrels of No. 6 fuel oil per year. The magnitude of this requirement indicates that the proposed standards would not have a major impact on the imbalance between national energy demand and domestic supply.

The incremental energy requirements of the proposed standards would be generated by the use of fans or pumps to circulate exhaust gas or scrubbing liquids through control devices, and the direct consumption of natural gas or fuel oil to incinerate exhaust gases or maintain process conditions that reduce the generation of pollutants. The incremental energy represents an increase of approximately 0.3 percent above the process energy requirements for new kraft pulp mills.

Economic Impact

The proposed regulations could affect an estimated 17 million tons of kraft pulping capacity by 1981. About a third of that capacity would be affected as a result of mill capacity expansions. The remainder would be affected via replacement of deteriorated designated facilities. It is projected that the construction of 13 new mills or expansions of existing mills, with a capacity of 100 T ADP/day, will occur through 1980. Replacement of existing deteriorated designated facilities will occur at an estimated 18 mills.

Total incremental investment costs through 1981 are projected to be $186 million. The fifth-year annualized costs, including depreciation and interest, are estimated at $33 million. About a third of these costs would be incurred by mills expanding capacity, while the remainder would be incurred by mills replacing deteriorated designated facilities.

The costs that new, modified, and reconstructed kraft pulp mills would incur to comply with the proposed standards are considered reasonable. No difference in impact among mill sizes could be distinguished, and the proposed standards would not have an adverse impact on either small or large mills. The capital required for typical new mills would be increased by less than 2 percent, and the price of semi-bleached kraft pulp would be increased by less than 2 percent. The effect the proposed standards would have on demand and supply of kraft pulp and on the future growth of the kraft pulp industry is considered negligible. It is emphasized that the costs are considered reasonable for new and modified sources and that it is not implied that the same costs apply to the retrofitting of existing sources. The review of the economic impact has shown that the proposal is not a major action under the Inflationary Impact Statement (IIS) program and no IIS is needed.

Selection of Source Categories and Affected Facilities

Section 111 of the Act directs the Administrator to establish standards of performance for stationary sources that may contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare. Kraft pulp mills are a major source of TRS compounds and particulate matter emissions. TRS compounds can have an adverse effect on public welfare and particulate matter can have an adverse effect on public health and welfare. Kraft pulp mills were selected for the development of standards based on expected growth of the industry and the beneficial impact that would result from the application of best technology for air pollution control. Kraft pulping has historically been a rapidly growing industry, with a growth rate of 6.5 percent per year between 1950 and 1975. The annual growth rate for 1970 to 1978 is projected to be 3.5 percent, but estimates show that the growth rate may return to a higher rate in 1977.

TRS emissions from kraft pulp mills are composed primarily of hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide. These sulfide compounds are extremely odorous and exhibit odor threshold concentrations of no more than a few parts per billion. A study of the national social and economic impacts of odors performed in 1971-1973 by Cluley International Corporation for EPA found that the pulp and paper industry ranks in the upper quarter of all odor sources in terms of strength and public objection to the odors. The emissions from each pulp mill surveyed in the study affect an average of 44,000 persons over an area of approximately 130 square miles. The survey of 156 local air pollution control agencies in the United States ranked the pulp and paper source category as the fastest growing odor problem.

The establishment of standards of performance for TRS emissions from kraft pulp mills under section 111 of the Act would involve section 111(d) which provides for control of any air pollutants which are not on lists published pursuant to section 108(a) of title I (NAAQS) of the Act. TRS has not been named on either list. Specifically, section 111(d) requires that the Administrator prescribe a procedure to assure that States develop, implement, and enforce emission standards for existing sources that would be subject to the standard of performance if they were new sources. EPA promulgated regulations that establish procedures and requirements for submittal of State plans under section 111(d) on November 17, 1975 (40 FR 53340). As a consequence of the provisions of section 111(d), promulgation of this standard of performance for new and modified sources would require that the states develop emission standards for existing kraft pulp mills.

The proposed standards would apply to all process gas streams which have been identified as major sources of TRS compounds or particulate matter at kraft pulp mills. The following affected facilities are specified by the proposed standards: (1) digester system, (2) brown stock washer system, (3) multiple-effect evaporator system, (4) black liquor oxidation system, (5) recovery furnace, (6) smelt dissolving tank, (7) lime kiln, and (8) condensate stripping system.

Water treatment ponds are significant sources of TRS emissions at many kraft pulp mills. Evaluations of odors in the immediate vicinity of mills indicate that TRS emissions from these ponds vary considerably from source to source, and do not produce an odor problem at some mills. Methods for measuring TRS emissions from kraft pulp mill water treatment ponds are not available at this time, and the proposed standards would not apply to these facilities. Emissions from ponds can be avoided by treating the process condensate stream in a condensate stripper system prior to discharge into the pond, but bacterial action could generate additional TRS in some ponds. EPA intends to further investigate measurement and emission control methods for water treatment ponds at kraft pulp mills, and determine whether regulation under the performance standard is appropriate.

Bark and power boilers are two sources of particulate emissions at kraft pulp mills that are not covered by the proposed standards. EPA plans to develop new source performance standards for industrial boilers, and this source category will include boilers at kraft pulp mills.

Rationale

The bases for the proposed standards include, inter alia, information derived from: (1) available technical literature on the kraft pulping industry and emission control of the kraft pulping process, (2) unpublished studies sponsored by EPA of emission control of the kraft recovery process, (3) information gathered during visits to pollution control agencies and kraft pulp mills in the United States, (4) comments and suggestions solicited from experts, and (5) the results of measurements of emissions conducted by EPA and by the industry. The proposed standards for TRS emissions would require combinations of several control methods:

1. Use of improved process operating procedures to reduce the generation of TRS (such as control of the black liquor firing rate, the sulfur concentration within the furnace, and the air-to-solids ratio during operation). Recovery furnace more efficient mud washing and control of temperature and oxygen concentration (lime kiln), and use of clean water that is low in dissolved sulfides in the particulate scrubber (smelt dissolving tank).

2. Use of process equipment such as the indirect-contact evaporator system or black liquor oxidation system that inherently reduces the generation of TRS (recovery furnace system).

3. Use of control equipment such as scrubbers with caustic solution to collect TRS (lime kiln).

4. Use of incineration to convert TRS into less objectionable compounds (digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, and condensate stripper system).

Recovery Furnace

The recovery furnace is the largest single source of particulate matter and TRS at a kraft pulp mill. In the direct-contact conventional furnace, heat is recovered by directly contacting the furnace combustion gases with black liquor in a direct-contact evaporator. Most of the TRS discharged from direct-contact recovery furnaces is generated in the direct-contact evaporator, which also collects an appreciable portion of the particulate matter generated by the combustion of black liquor in the furnace.

The two methods for reducing TRS emissions from recovery furnaces are: (1) The use of a black liquor oxidation system to reduce the sodium sulfide content of the black liquor before evaporation in a direct-contact evaporator, and (2) bypass the formation of TRS in the direct-contact evaporator, and (3) the elimination of the direct-contact evaporator in an indirect-contact recovery furnace. Since comparable emission levels of TRS can be achieved by these two control methods, the proposed standards would be attained by using either type of recovery furnace. However, the proposed emission limit of 5 ppm TRS, four-hour average, is lower than that being achieved by some existing recovery furnaces of either type and would therefore require more careful operation and additional black liquor oxidation for comparable new furnaces.

Electrostatic precipitators (ESP's) are used almost universally to control particulate matter emissions from kraft recovery furnaces. Scrubbers with relatively low collection efficiencies are in use at a few facilities. Data performed by EPA demonstrate that the proposed particulate standard could be achieved by a properly designed and well maintained ESP.

The industry has stated that ESP's operated on kraft recovery furnaces should be allowed to deteriorate over the life of the ESP, even when it is well maintained. In response, EPA obtained information from mill operators and vendors of ESP's and concluded that good maintenance of wires, collection plates, and rapping systems would ensure that particulate matter emissions from a properly designed and operated ESP could not increase to a large extent over the life of the ESP. EPA recognizes that ESP's at kraft recovery furnaces must withstand more severe service than for some other applications. Accordingly, the proposed standards would require the more rugged, oversized ESP's to be designed in order to accommodate, for example, the more severe plate rapping and stressing of wires experienced at kraft pulp mills. The additional cost of the more rugged, oversized ESP was included in the economic analysis and is considered to be reasonable.

The industry has also stated that the performance of ESP's operated on kraft recovery furnaces should be allowed to deteriorate until there is a sufficient amount of maintenance to be performed that the necessary shutdown of the furnace would be justified. EPA believes that this is a reasonable approach. According to this proposed particulate matter standard for recovery furnaces would allow some deterioration; the proposed emission limit has been set somewhat lower than the levels known to be achievable on the basis of both the results of particulate matter tests performed for EPA and design levels for new kraft recovery furnace ESP's.

EPA has determined that an oxygen concentration in excess of 8 percent in the gas stream measured after the recovery furnace control device represents excessive air infiltration and results in excessive dilution of the gas stream. The proposed standard, therefore, requires that all concentrations of particulate matter and TRS measured after the recovery furnace control device that have an oxygen concentration in excess of 8 percent be corrected to 8 percent oxygen.

Lime Kilns

Lime kilns are a major source of particulate matter emissions at kraft pulp mills. Because the lime mud that is processed in the kiln contains residual quantities of sulfides, lime kilns are also sources of TRS emissions.

The two methods for controlling TRS emissions from lime kilns are: (1) more efficient washing to reduce the sulfide content of the lime mud, and control of kiln exhaust gas temperature and oxygen content, and (2) use of sodium hydroxide (caustic) in the scrubber that controls particulate emissions from most kilns. Tests carried out by EPA demonstrate that when the first TRS control method (process control) is applied, the simultaneous addition of caustic to a scrubber produces a significant reduction in TRS emissions below that achievable with

[illegible] control alone. The annualized cost for caustic addition to the scrubber is small where the caustic is not part of the make-up to the kraft causticizing system. Accordingly, the proposed standard is 64 ng/J (0.15 lb/million Btu) heat input (HHV) of fuel fired. This four hour average would require both the best process controls for lime kiln operation and caustic addition to the scrubber, or an equivalent system.

In developing the proposed standards, EPA carried out six tests for particulate emissions from lime kilns. In each case the control device for particulate matter was a medium pressure drop scrubber, the most widely used control technique in the domestic industry. However, one domestic kraft pulp mill controls particulate emissions with an electrostatic precipitator. Based on design parameters and emission data supplied by the owner of this ESP, this system achieves an emission level significantly below that determined by EPA for medium pressure drop scrubbers. However, the waste gases from the digester system and multiple-effect evaporator system, which could more economically be incinerated in the lime kiln, are processed in a separate incinerator at this facility to control TRS emissions. The cost and energy penalties for the separate incinerator are relatively large. The industry has commented that it may not be feasible to incinerate the waste gases from other sources in a kiln controlled by an ESP because gases may explode in the ESP when flameouts occur in the kiln. Solutions to this potential problem, such as automatic diverting of inlet gases away from the kiln when a flameout occurs, have been considered, but there is at this time no demonstrated technology that will ensure that explosions would not occur.

In arriving at the proposed standard for particulate matter emissions from lime kilns, EPA considered the alternatives of a medium pressure drop scrubber alone, an ESP alone, and both particulate control systems operated in series. A separate incinerator to control TRS emissions from digester systems, multiple-effect evaporator systems, and condensate stripper systems was included in the two alternative ESP systems. EPA concluded that the relatively large increments in cost and energy usage associated with the ESP alternatives were not justified by the additional particulate control gained beyond that achievable with a medium pressure drop scrubber alone. Consequently, the proposed particulate matter standard would require a medium pressure drop scrubber (approximately 30 inches water gauge) or equivalent.

EPA has determined that an oxygen concentration in the gas stream measured after the lime kiln control device in excess of 10 percent represents excessive air infiltration; therefore, the proposed standards require that all measurements of particulate matter and TRS that have an oxygen concentration in excess of 10 percent be corrected to 10 percent oxygen.

Smelt Dissolving Tanks

Smelt dissolving tanks discharge particulate matter composed of finely divided smelt particles that are entrained in the steam emitted from the tank by an uncontrolled boiler. The quantity of particulate emissions is small in comparison with that from recovery furnaces and lime kilns. This emission can be generated in the dissolving tank or in a scrubbing device that collects particulate matter, depending primarily on the sulfur content of water used to dissolve the smelt and to perform the scrubbing. Standards in terms of concentration of pollutants are not considered appropriate for smelt dissolving tanks because the effluent stream is primarily air and no correction for oxygen content and dilution air is possible to ensure effective enforcement.

Particulate emissions from smelt dissolving tanks are controlled by using wire mesh demister pads or low energy scrubbers. The scrubbers remove particulate matter much more effectively, though the energy requirements and operating costs are higher than for demisters. The proposed particulate standard for smelt dissolving tanks would require the use of low energy scrubbers or equivalent systems, and is supported by four EPA tests on two types of low energy scrubbers. The proposed TRS standard for smelt dissolving tanks would prevent the use of water highly contaminated with sulfides for dissolving the smelt and for particulate scrubber systems.

Other Sources

Approximately one-quarter of the total uncontrolled TRS emissions from a typical kraft pulp mill are generated by the digester system, brown stock washer system, black liquor oxidation system, multiple-effect evaporator system, and condensate stripper system. Inefficient control of these facilities could have a large impact on localized odor problems. The effluent streams can be incinerated in the recovery furnace, the lime kiln or a separate incinerator to achieve most of the TRS. The quantity of auxiliary fuel required for incineration is greatly reduced if incineration is performed in the recovery furnace and the lime kiln. If the noncondensable gases from the brown stock washer system and the black liquor oxidation system are incinerated, for example, in the recovery furnace, some auxiliary fuel may be required. However, the noncondensable gases from the digester system, multiple-effect evaporator system, and condensate stripper system would not require additional fuel if incinerated in the lime kiln as part of the primary air feed to the kiln. The proposed standard of 5 ppm TRS, four-hour average, for each of these five affected facilities would require incineration in the recovery furnace and the lime kiln or equivalent.

Opacity Standard

An opacity standard is proposed for recovery furnace systems to ensure proper operation and maintenance of the particulate control device. No opacity standards are proposed for lime kilns and smelt dissolving tanks, which frequently generate persistent plumes of condensed water vapor. The effluent plume is so greatly diminished by the time the vapor plume disappears that the observed opacity would not be as effective an indicator of the performance of the particulate control system as other parameters. Monitoring the operating parameters of the control system would be more effective.

State Implementation Plans

It should be noted that standards of performance for new sources established under section 111 of the Clean Air Act reflect emission limits achievable with the best adequately demonstrated system of emission reduction considering the cost of such systems. State implementation plans (SIP's), approved or promulgated under section 110 of the Act, on the other hand, must provide for the attainment and maintenance of national ambient air quality standards (NAAQS) designed to protect public health and welfare. For this purpose SIP's must in some cases require greater emission reductions than those required by standards of performance for new sources. In addition, States are free under section 116 of the Act to establish more stringent emission limits than those established under section 111 or those necessary to attain or maintain the NAAQS under section 110. Thus, new and existing sources may in some cases be subject to limitations more stringent than EPA's standards of performance under section 111.

Testing, Monitoring, and Recordkeeping

Under the proposed standards, performance tests for TRS emissions according to Reference Method 16 promulgated herein would be required for all affected facilities. Performance tests for particulate matter emissions from recovery furnace systems, lime kilns, and smelt dissolving tanks would also be required. Particulate matter emissions would be measured by Reference Methods 1 through 5, Method 17 (in-stack filter) is being proposed as an alternative method to measure particulate emissions from the recovery furnace. It is being promulgated in Appendix A, Reference Methods, because the Agency intends to also promote Method 17 as a reference method to measure particulate matter from grain elevators.

The proposed standards include provisions for continuously monitoring the opacity of visible emissions discharged from recovery furnaces. To ensure proper operation and maintenance of scrubbers installed on lime kilns and on smelt dissolving tanks, provisions are included for monitoring the pressure drop across the scrubber and the scrubbing fluid supply pressure to the scrubber.

Where emissions from the digester system, brown stock washer system,

multiple-effect evaporator system, black liquor oxidation system, or condensate stripper are monitored in a device other than a lime kiln or recovery furnace, it is proposed that the device temperature or the device be monitored.

A requirement for the continuous monitoring of TRS emissions from the recovery furnace and lime kiln is also proposed. The specifications for continuous TRS monitors are not being proposed at this time because they have not been completely developed. However, the development of these specifications is monitored and they are expected to be promulgated at the time that the kraft pulp mill standards of performance are promulgated.

A requirement to monitor the oxygen concentration of the gas stream on a dry basis after the control device is being proposed for the lime kiln and recovery furnace. The monitoring of oxygen concentrations is necessary to correct the TRS and particulate concentrations for the lime kiln and recovery furnace when the oxygen concentrations in the respective gas streams are in excess of 10 percent and 8 percent oxygen.

Records of performance testing measurements, continuous monitoring system measurements, and monitoring device measurement would have to be retained for at least two years following the date of the measurements by owners or operators subject to the provisions of this subpart. This requirement is included under § 60.7(d) of the regulation.

Public Participation

As prescribed by section 111, this proposal of standards of performance has been preceded by the Administrator's determination that kraft pulp mills contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare and by the publication of this determination in this issue of the FEDERAL REGISTER. In accordance with section 117 of the Act, publication of these proposed standards was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies.

Interested persons may participate in this rulemaking by submitting written comments (in triplicate) to the Emission Standards and Engineering Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin. The Administrator will welcome comments on all aspects of the proposed regulations, including the designation of kraft pulp mills as a significant contributor to air pollution which causes or contributes to the endangerment of public health or welfare, economic and technological issues, and the proposed test methods. All relevant comments received on or before November 21, 1975 will be considered. Comments received will be available for public inspection and copying at the EPA Public Information Reference Unit, Room 2922 (EPA Library), 401 M Street, S.W., Washington, D.C. 20460.

Background information on these proposed standards of performance has been published in a document entitled "Standards Support and Environmental Impact Statement: Standards of Performance for Kraft Pulp Mills, Volume 1." This report presents the factors considered in the development of the proposed standards, including alternative emission control systems, emission test data, environmental impact, costs, and economic considerations. Copies of the document may be obtained free of charge by writing to the Public Information Center (PM-215), U.S. Environmental Protection Agency, Washington, D.C. 20460 (specify "Standards Support and Environmental Impact Statement, Standards of Performance for Kraft Pulp Mills, Volume 1").

AUTHORITY: This notice of proposed rulemaking is issued under the authority of secs. 111, 114, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 1857c-6, 1857c-9, 1857g(a)).

Dated: September 15, 1975.

JOHN QUARLES,
Acting Administrator.

It is proposed to amend Part 60 of Chapter I of Title 40 of the Code of Federal Regulations as follows:

1. By adding Subpart BB as follows:

Subpart BB—Standards of Performance for Kraft Pulp Mills

Sec.

60.280 Applicability and designation of affected facility.
60.281 Definitions.
60.282 Standard for particulate matter.
60.283 Standard for total reduced sulfur (TRS).
60.284 Monitoring of emissions and operations.
60.285 Test methods and procedures.

AUTHORITY: Secs. 111, 114, and 301(a) of the Clean Air Act, as amended by sec. 4(a) of Pub. L. 91-604, 84 Stat. 1676, and by sec. 15(c)(2) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-6, 1857c-9, and 1857g(a)).

Subpart BB—Standards of Performance for Kraft Pulp Mills

§ 60.280 Applicability and designation of affected facility.

The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills in which kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

§ 60.281 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in Subpart A.

(a) "Kraft pulp mill" means any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide ("white liquor") at high temperature and pressure. Regeneration of the cooking chemicals through a recovery process is also considered part of the kraft pulp mill.

(b) "Neutral sulfite semichemical pulping operation" means any operation in which pulp is produced from wood by cooking (digesting) wood chips in a solution of sodium sulfite and sodium bicarbonate, followed by mechanical defibrating (grinding).

(c) "Total reduced sulfur (TRS)" means the sum of the sulfur compounds, primarily hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide, that are released during the kraft pulping operation and measured by Method 16.

(d) "Digester system" means each continuous digester or each batch digester used for the cooking of wood in white liquor, and associated flash tank(s), blow tank(s), chip steamer(s), and condenser(s).

(e) "Brown stock washer system" means knotters, vacuum pumps, and filtrate tanks used to wash the pulp following the digester system.

(f) "Multiple-effect evaporator system" means the multiple-effect evaporators and associated condenser(s) and hotwell(s) used to concentrate the spent cooking liquid that is separated from the pulp (black liquor).

(g) "Black liquor oxidation system" means the vessels used to oxidize, with air or oxygen, the black liquor, and associated storage tank(s).

(h) "Recovery furnace" means the unit used for burning black liquor to recover chemicals containing primarily sodium carbonate and sodium sulfide. The recovery furnace includes the direct-contact evaporator for a conventional furnace.

(i) "Smelt dissolving tank" means a vessel used for dissolving the smelt collected from the recovery furnace.

(j) "Lime kiln" means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

(k) "Condensate stripper system" means a column and associated condensers used to strip, with air or steam, TRS compounds from condensate streams from various processes within a kraft pulp mill.

§ 60.282 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any recovery furnace any gases which:

(i) Contain particulate matter in excess of 0.10 g/dscm (0.044 gr/dscf);

(ii) Exhibit 35 percent opacity or greater.

(3) From any smelt dissolving tank any gases which contain particulate matter in excess of 0.15 g/kg ADP (0.3 lb/ton ADP).

(4) From any lime kiln any gases which:

(i) Contain particulate matter in excess of 0.15 g/kg dry (0.067 gr/dscf) when gaseous fossil fuel is burned.

(ii) Contain particulate matter in excess of 0.30 g/kg dry (0.13 gr/dscf) when liquid fossil fuel is burned.

§ 60.283 Standard for total reduced sulfur (TRS).

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any digester system, brown stock washer system, multiple effect evaporator system, black liquor oxidation system, or condensate stripper system any gases which contain TRS in excess of 5 parts per million (ppm) by volume except as provided under paragraph (a)(3) of this section.

(2) From any recovery furnace any gases which contain TRS in excess of 5 ppm by volume.

(3) From any smelt dissolving tank any gases which contain TRS in excess of 0.016 g/kg ADP (0.033 lb/ton ADP).

(4) From any lime kiln any gases which contain TRS in excess of 8 ppm by volume.

(b) The Administrator may exempt any new, modified or reconstructed black liquor oxidation system or brown stock washer system at an existing kraft pulp mill provided the owner or operator demonstrates that incinerating the exhaust gases from such system in an existing recovery furnace is technologically and economically not feasible. Any exempt system will become subject to the provisions of this subpart if the recovery furnace is changed so that the gases can be incinerated.

§ 60.284 Monitoring of emissions and operations.

(a) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate the following continuous monitoring systems:

(1) A continuous monitoring system to monitor and record the oxygen of the gases discharged into the atmosphere from any recovery furnace. The span of this system shall be set at 50 percent oxygen.

(2) A continuous monitoring system except as provided in paragraph (b)(1) of this section, to monitor and record the concentration of TRS compounds discharged into the atmosphere from any digester system, brown stock washer system, multiple effect evaporator system, black liquor oxidation system, recovery furnace, lime kiln, or condensate stripper system. The span shall be set at a TRS concentration of 30 ppm.

(3) A continuous monitoring system to monitor and record the percent of oxygen by volume in the gases discharged from any recovery furnace or lime kiln. The continuous monitoring system shall be located downstream of the control devices for the recovery furnace or lime kiln, and all measurements shall be made on a dry basis. The span of this system shall be set at 20 percent oxygen.

(b) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(1) A monitoring device which measures the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple effect evaporator system, black liquor oxidation system, or condensate stripper system and which are combusted in a power boiler or separate incineration unit. The monitoring device is to be certified by the manufacturer to be accurate within ±1% of [illegible] °F.

(2) For any lime kiln or smelt dissolving tank using a scrubber emission control device:

(i) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the control equipment. The monitoring device is to be certified by the manufacturer to be accurate to within a gage pressure of ±500 pascals (±2 inches water gage pressure).

(ii) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of design scrubbing liquid supply pressure. The pressure sensor or tap is to be located close to the scrubber liquid discharge point. The Administrator may be consulted for approval of alternative location.

(c) Any owner or operator subject to the provisions of this subpart shall calculate and record on a daily basis:

(1) Four hour average TRS concentrations for the six consecutive four-hour periods of each operating day. Each four hour average shall be determined as the arithmetic mean of the appropriate four contiguous one-hour average total reduced sulfur concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(2) Four hour average oxygen concentrations for the six consecutive four-hour periods of each operating day for the recovery furnace and lime kiln. These four-hour averages shall correspond to the four-hour average TRS concentrations under paragraph (c)(1) of this section and shall be determined as an arithmetic mean of the appropriate four contiguous one-hour average oxygen concentrations provided by each continuous monitoring system installed under paragraph (a)(3) of this section.

(d) Any owner or operator of a recovery furnace or lime kiln subject to the provisions of this subpart shall:

(1) Correct any four-hour average TRS concentration corresponding to a four-hour average oxygen concentration that is in excess of 8 volume percent for the recovery furnace. The concentration shall be corrected to 8 volume percent oxygen.

(2) Correct any four-hour average TRS concentration corresponding to a four-hour average oxygen concentration that is in excess of 10 volume percent for the lime kiln. The concentration shall be corrected to 10 volume percent oxygen.

(3) Calculate the correction required in paragraphs (d)(1) and (2) of this section according to the following equation:

$$C_{corr} = C_{meas}\left(\frac{21 - A}{21 - O}\right)$$

[illegible]

(e) For the purpose of reports required under § 60.7(c), any owner or operator subject to the provisions of this subpart shall report periods of excess emissions as follows:

(1) For emissions from the recovery furnace:

(i) All four-hour averages of TRS concentrations above 5 ppm.

(ii) All six-hour average opacities that exceed 35 percent, except that 5 percent of the averages may exceed 35 percent opacity. The exception does not apply to excess emissions due to malfunctions, startups, or shutdowns of the facility or control device.

(2) For emissions from the lime kiln:

All four-hour average TRS concentrations above 8 ppm, except that 6 percent of all four-hour averages of TRS concentrations are not considered to be excess emissions if they are less than 10 ppm. The exception does not apply to excess emissions due to malfunctions, startups, or shutdowns of the facility or control device.

(3) For emissions from the digester system, brown stock washer system, multiple effect evaporator system, black liquor oxidation system, or condensate stripper system where the gases are incinerated in a device other than a recovery furnace or lime kiln: All four-hour average TRS concentrations above 5 ppm, unless the requirements of paragraph (b)(1) of this section are met.

§ 60.285 Test methods and procedures.

(a) Reference methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance with § 60.284(a) as follows:

(1) Method 5 for the concentration of particulate matter and the associated moisture content.

(2) Method 1 for sample and velocity traverses.

(3) When determining compliance with § 60.284(a)(1), Method 2 for velocity and volumetric flow rate.

(4) Method 3 for gas analysis, and

(5) Method 9 for Visible emissions.

(b) For Method 5 the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.85 dscm/h (0.53 dscf/min), except that shorter sampling times when necessitated by process variables or other factors, may be approved by the Administrator. Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure outlined in Method 5.

(c) Method 17 (in-stack filtration) may be used as an alternate method for Method 5 for determining compliance with § 60.282(a)(1)(i): *Provided*, That a constant value of 0 mg/dscm (0 gr/dscf) is added to the results of Method 17, and the stack temperature is no greater than 450° K (or 350° F). Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure outlined in Method 17.

(d) For the purposes of determining compliance with § 60.282(a) (1), (2), (3), and (4), the following reference methods shall be used:

(1) Method 10 for the concentration of CO;

(2) Method 3 for gas analysis, and

(3) When determining compliance with § 60.282(a)(3), Method 2 for velocity and volumetric flow rate.

(e) All concentrations of particulate matter and CO from the lime kiln and recovery furnace that are measured as required by this section shall be corrected to 10 volume percent oxygen and 8 volume percent oxygen, respectively, when the oxygen concentrations exceed these values.

Appendix A—Reference Methods

5. Method 16 and Method 17 are added to Appendix A as follows:

* * * * *

Method 16—Semi-continuous Determination of Sulfur Emissions From Stationary Sources

1. Principle and applicability

1.1 *Principle.* A gas sample is extracted from the emission source and diluted with clean dry air. An aliquot of the diluted sample is then analyzed for gaseous sulfur compounds by gas chromatographic (GC) separation and flame photometric (FPD) detection. Two GC-FPD analytical systems equipped with sulfate columns are used for separation of both low and high molecular weight TRS compounds.

1.2 *Applicability.* This method is applicable for determination of TRS compounds when specified by an applicable subpart.

2. Range and sensitivity

2.1 *Range.* The maximum limit of the FPD for each sulfur compound is about 1 ppm. This limit is expanded by dilution of the sample gas before analysis. Kraft mill gas samples are normally diluted 10 to 1, resulting in an upper limit of about 10 ppm for each compound.

2.2 *Sensitivity.* The minimum detectable concentration of the FPD is less than 50 ppb.

3. Interferences

3.1 *Moisture condensation.* Moisture condensation in the sample delivery system, the analytical system, or the FPD burner can cause losses or interference. This problem can be eliminated by heating the sample line and by conditioning the sample with dry dilution air to lower the dew point below the operating temperature of the GC and FPD analytical system prior to analysis.

3.2 *Carbon monoxide and carbon dioxide.* CO and CO_2 have a substantial deadening effect on the detector even after 10:1 dilution. This potential interference is eliminated by using GC and FPD, with the gas passing prior to elution of any sulfur compounds.

3.3 *Particulate matter.* Particulate matter in the samples can cause interference by eventual clogging of the analytical system. This interference is eliminated by use of a filtered probe described in Section 6.1.1.

4. Precision

4.1 *Standard precision.* A series of three consecutive injections of the same calibration gas, at the dilution, should produce results which do not vary by more than 5% from the mean of the three injections.

4.2 *Calibration error.* The calibration drift determined from the mean of three injections made at the beginning and end of any 8 hour period should not exceed 5%.

5. Apparatus

5.1 *Probe.* Figure 16-1 illustrates the probe used in lime kiln and other dusty gas streams with significant amounts of particulate matter are present. The probe is fastened with the reference probe clamp between the sample and the gas inlet tube and the filter and probe tip to reduce clogging of the filter and moisture condensation of effluent gas. The exposed portion of the probe between the sampling port and the sample inlet is heated with heating tape.

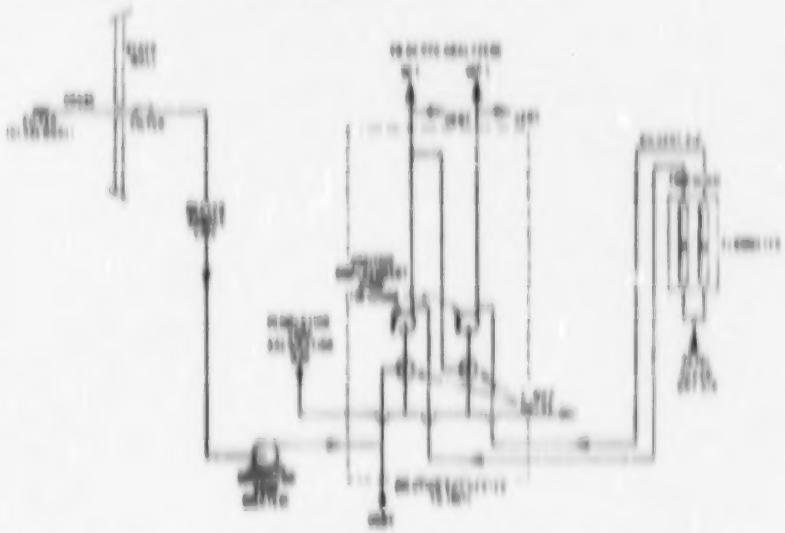


Figure 16-1 [illegible]

5.1.1 *Sample line.* Teflon tubing diameter [illegible] Teflon tubing heated to 120° C. This temperature is controlled by a thermostatic heater.

5.1.2 *Sample pump—leakless Teflon coated diaphragm type or equivalent.* The pump used is located in the GC by pulling it to the sample dilution box (5.3.4 below).

5.2 *Dilution system.* A schematic diagram of the dynamic dilution system is given in Figure 16-2. The dilution system is constructed such that all sample contacts are made of inert material. The dilution system is heated to 120° C and must be capable of a minimum of 10:1 dilution of sample. Equipment used in the dilution system is listed below:

5.2.1 *Dilution pump—Model.* A 150 Gardner Denver gas-driven displacement type, non-adjustable (80 cc min.), or equivalent per dilution stage. A 10:1 dilution of sample is accomplished by combining 150 cc of sample with 1350 cc of clean dry air as shown in Figure 16-2.

5.2.2 *Valves.* Three-way Teflon solenoid or manual type

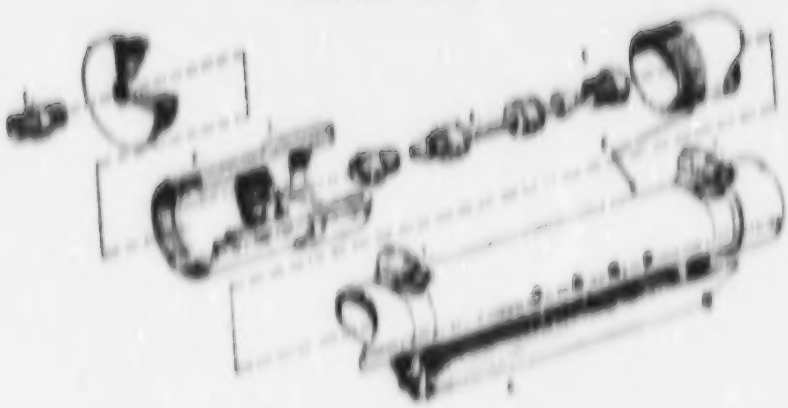


Figure 6-1. [illegible]

Description of Figure 10-1

A. [illegible] pipe cap.

B. A [illegible] Teflon filter disc glass wool inside.

C. [illegible] pipe cap which is drilled out and acheck on the end of the [illegible] filter.

D. [illegible] stainless steel tubing with four [illegible] holes drilled at the end through both sides. These holes are [illegible] apart. The tubing is also packed with glass wool inside.

E. [illegible] cap for sampling end of tubing.

F. [illegible] stainless steel pipe tapered at both ends [illegible] holes drilled all the way through both sides. These holes are [illegible] apart.

G. [illegible] clamps.

H. [illegible] type reducer.

I. [illegible] pipe nipple.

6.6.2. Tubing—Teflon tubing and fittings are used throughout from the sample probe to the [illegible] to prevent [illegible] the sample gas.

6.6.3. Oven—Insulated box heated and maintained at [illegible] sufficient dilution to [illegible] dilution apparatus.

6.6.4. Flowmeters—Rotameters or equivalent to measure flow from 0 to [illegible] per minute.

6.7. Gas Chromatograph, optional. Two types of columns are used for separation of low and high molecular weight sulfur compounds.

6.8. Low Molecular Weight Sulfur Compounds Column (see Figure 11).

6.8.1. Separation Column—[illegible] mm ID x [illegible] mm long stainless steel tubing packed with 30-40 mesh Teflon coated with [illegible] polyphenyl ether and [illegible] orthophosphoric acid or equivalent (see Figure 10-2).

6.8.2. Detector or Precolumn—[illegible] mm ID x [illegible] mm long stainless steel tubing packed with 30-40 mesh Teflon coated with [illegible] polyphenyl ether and [illegible] orthophosphoric acid or equivalent (see Figure 10-2).

6.8.3. Sample Valve—[illegible] ten port gas sampling valve equipped with a [illegible] sample loop, actuated by compressed air (Figure 10-3).

6.8.4. Oven—For maintaining sample valve, stripper column and separation column. The oven should be capable of maintaining an elevated temperature ranging from ambient to [illegible] (Figure 10-3).

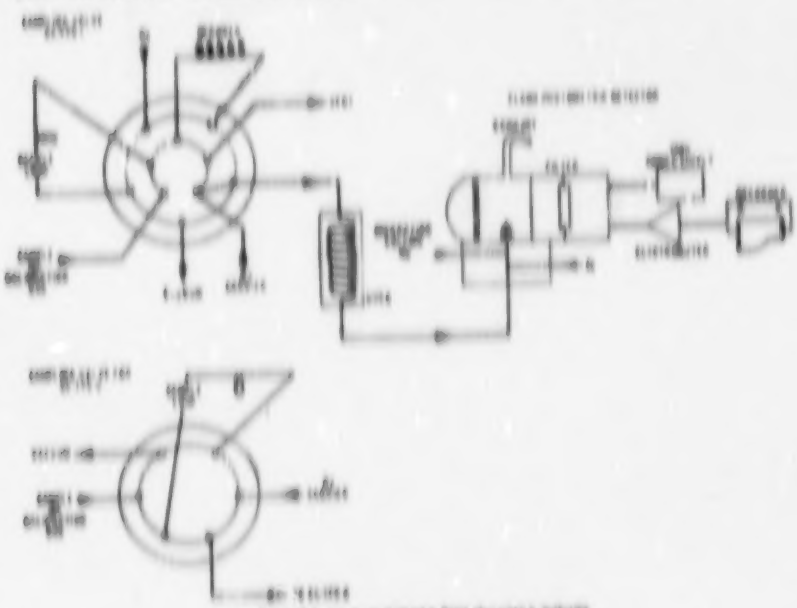


Figure 6-2. [illegible]

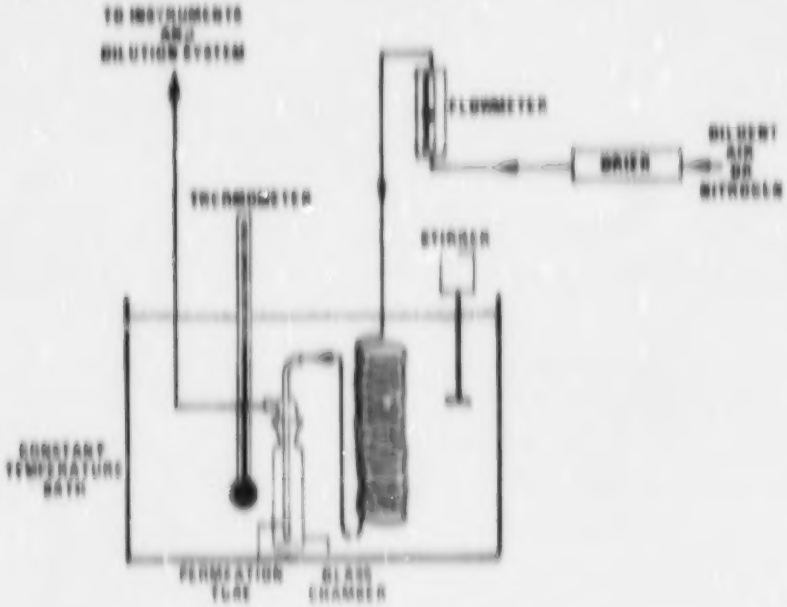


Figure 10-4.—Apparatus for field calibration.

6.4.4 Mass Flowmeters—Two mass flowmeters (or the range 0.0 l/min and 0 to 5 l/min or equivalent air flow over permeation tubes at 25° C. These flowmeters shall be accurately calibrated at the beginning of each test. Using a compressed flow rate in the proximity range of both flowmeters, set and record the flow rate of gas over the permeation tubes. Injection of calibration gas prepared at this flow rate as measured by the flowmeter followed by injection of calibration gas at the same flow rate as measured by the other flowmeter should agree within the specified precision limits. If not so, and there is a problem with the mass flow measurement, the mass flowmeter shall be calibrated prior to the test (or with a wet test meter and thereafter at the end of each test.

6.4.5 Constant Temperature Bath—A bath of maintaining permeation tubes at certification temperature of 30° C within ±0.1° C.

6.4.6 Temperature Monitor—Thermometer or equivalent to monitor bath temperature within ±0.1° C.

6 Reagents

6.1 Pure Nitrogen (N_2)—prepurified grade or better.

6.2 Combustion Gas—Oxygen (O_2), research purity or better.

6.3 Diluent gas Nitrogen (N_2)—prepurified grade or better.

6.3.1 Generation Systems—Set up by 0.5 to 10 l/min by 0.005 to 1 l/min standard Teflon tubing packed pipe on 80 mesh Teflon coated with 10 percent Triton X 305 or equivalent.

6.3.2 Sample Valve—Teflon six port gas sampling valve equipped with a 10 ml sample loop, actuated by compressed air (Figure 10-5).

6.3.3 Other Components—All components same as in 6.3.1 to 6.3.10.

6.4 Calibration—Permeation tube system (Figure 10-5).

6.4.1 Tube Chamber—Glass chamber of sufficient dimensions to house permeation tubes.

6.4.2 Dilution Systems—Set up by 0.5 to 10 l/min by 0.005 to 1 l/min standard Teflon tubing packed pipe on 80 mesh Teflon coated with 10 percent Triton X 305 or equivalent.

6.4.3 Sample Valve—Teflon six port gas sampling valve equipped with a 10 ml sample loop, actuated by compressed air (Figure 10-5).

6.4.4 Other Components—All components same as in 6.3.1 to 6.3.10.

6.5 Calibration—Permeation tube system (Figure 10-5).

6.5.1 Tube Chamber—Glass chamber of sufficient dimensions to house permeation tubes.

6.6 Effluent Air containing less than 0.1 ppm total sulfur compounds and less than 10 ppm each of moisture and total hydrocarbons and filtered using AMA filters, after and traces of particulate. Moisture of sulfur compounds can be verified by injecting dilution air into described in Section 6.6.

6.6 Compressed Air Supply for the valve actuator.

6.6 Calibration Gases—Permeation tubes experimentally calibrated and verified at 30.0° C.

7 Procedure

7.1 After the complete measurement system has been set up at the site and verified to be operational, the following procedures shall be completed before sampling is initiated.

7.1.1 Flowmeter Calibration and Leak Test—Appropriate calibration and leak test procedures shall be employed to verify the accuracy and the integrity of all flowmeters, sample lines and connections. For components which operate under negative pressure (lines and connections upstream of the sample pump), a leak test is performed using the sample pump to pull a vacuum. Attach the probe end of the sample line to a manometer of vacuum gauge, start the pump and pull a vacuum greater than 50 mm Hg. By valving off the inlet of the pump, there shall be no change in the vacuum gauge reading for at least 1 minute. Any leaks found must be corrected before proceeding.

7.1.2 Mass Flowmeter Calibration—Since all sample calculations are based on the actual volume of air flow measured by the mass flowmeters, it is essential that the accurate calibration check of Section 6.4.4 be followed.

7.1.3 Prior to any sampling run calibrate the system using the procedures set forth in Section 8. It is also that one run is performed during any 24 hour period a calibration need not be performed prior to the second and any subsequent runs. The calibration must however be verified as prescribed in Section 8 after the test run made within the 24 hour period.

8 Calibration

8.1 General Considerations. This section outlines steps to be followed for use of the GC/FPD and the dilution system. The procedure does not include detailed instructions because operation of these systems is complex and it requires an understanding of the individual systems being used. Each system should include a written operating manual describing in detail the operating procedures associated with each component in the measurement system. In addition, the operator should be familiar with the operating principles of the components particularly the GC/FPD. The references cited at the end of this method are recommended for review for this purpose.

8.2 Permeation Tubes. Under the following procedure accurately known concentrations of SO_2 or H_2S in the range of 0.1 to 20 ppm are generated by passing clean dry air or other diluent gas over permeation tubes containing a specific sulfur compound at a constant temperature. These tubes consist of hydrophobic Teflon FEP tubing sealed at both ends. The sulfur compound is contained in the inner portion of the tube. A constant rate of permeation through the Teflon wall at a specific temperature is maintained. The emitted sulfur compound is then carried away by a known flow rate of diluent gas. A series of known concentrations can be generated by varying and accurately measuring the flow rate of diluent gas passing over the tube. These calibration gases are used to calibrate the GC/FPD system and to prepare calibration curves.

8.3 Calibration System. A schematic of the permeation tube calibration apparatus is presented in Figure 10-4. Insert the permeation tubes into the glass tube chamber (Figure 10-5). Set the bath temperature to obtain a constant rate of permeation. The calibration temperature of the tubes is either 30° C. A temperature of 30° C is recommended for the tubes. Allow at least twenty four hours for the tubes to equilibrate. When equilibrated vary the flow rate of diluent air flowing over the tube to produce the desired concentrations for calibrating the analytical and dilution systems. The air flow across the tubes must at all times exceed the flow requirement of the analytical

process. The concentration in parts per million generated by a tube containing a specific permeant can be calculated as follows:

$$C = K \left(\frac{P}{M}\right)$$

Equation 16-1

Where:

C = Concentration of permeant produced in parts per million by a tube containing a specific permeant.

K = Constant for a specific permeant.

P = Mass of the permeant.

M = Molecular weight of the permeant.

$\left(\frac{P}{M}\right)$ = Moles of permeant.

For this test, three different permeation tubes are used to generate known concentrations of sulfur dioxide (SO2) and nitrogen dioxide (NO2) in the range of 0.03 to 0.5 ppm.

8.0 Operating Conditions for the PFPD Analyzer.

8.1 Low Molecular Weight Sulfur Compounds. The operating parameters for the PFPD system used for the molecular weight compounds are as follows: burner carrier gas flow rate of 50 cc minute (standard temperature of 25° C), detector temperature of 100° C, oven temperature of 30° C, hydrogen flow rate of 80 cc minute, oxygen flow rate of 20 cc minute and sample flow rate between 50 and 80 cc minute.

8.2 High Molecular Weight Sulfur Compounds. The operating parameters for the PFPD system for high molecular weight compounds are the same as in 8.1.1 except: oven temperature of 150° C and nitrogen carrier gas flow of 100 cc minute.

8.3 Calibration of the PFPD Analyzer. Generate a series of three or more known concentrations spanning the linear range of the PFPD, approximately 0.05 to 0.5 ppm, for each sulfur compound anticipated to be present in the gas stream analyzed. Dilute the standard gas stream with clean dry air. Inject these standards into the PFPD analyzers and monitor the responses. Three injections for each concentration must yield the precision described in Section 6.1. Failure to attain this precision is an indication of a problem in the calibration or analytical system. Any such problem must be identified and corrected before proceeding. Peak heights rather than integrated areas data processing systems should be used. However, integrated areas may be required for alternate analytes or matrix interferences.

8.4 Calibration Curve. Plot the detector response in current (amperes) versus sulfur dioxide concentration in ppm on log-log coordinate graph paper (or semi-log paper for single sulfur compound calibration).

8.5 Calibration of Dilution System. Generate a known concentration of hydrogen sulfide using the permeation tube system. Adjust the flow rate of diluent air for the first dilution step so that the desired level of dilution is approximated. Inject the diluted calibration gas into the PFPD and monitor the response. Three injections for each dilution must yield the precision described in Section 6.1. Failure to attain this precision is the first step in an indication of a problem in the dilution system. Any such problem must be identified and corrected before proceeding. Using the calibration curve for H2S (or sulfur compound) under 8.4.1, determine the diluted calibration gas concentration in ppm. Then, calculate the dilution factor as the ratio of the calibration gas concentration before dilution to the diluted calibration gas concentration determined under this paragraph. Repeat the procedure for each stage of dilution required.

9 Sampling and analysis procedure.

9.1 Sampling. Insert the sampling probe into the test duct nearing certain that no dilution air enters the stack through the port. Begin sampling and dilute the sample approximately 10:1 using the dilution system shown in Figure 16-5. Note that the proper dilution factor is that which is determined to paragraph 8.5. Condition the entire system with sample for a minimum of 10 minutes prior to commencing analysis.

9.2 Analysis. Aliquots of undiluted sample can be injected directly into the PFPD for analysis for SO2 (in lieu of the dilution system). The PFPD can also be used to measure the low molecular weight reduced sulfur compounds. The low molecular weight sulfur compounds include hydrogen sulfide, sulfur dioxide, methyl mercaptan, dimethyl sulfide, carbon disulfide, methyl mercaptan, dimethyl disulfide, and dimethyl sulfide. The GC column listed in paragraph 8.1 may be used to resolve the low molecular weight compounds. The high molecular weight compounds include propyl mercaptan, ethyl mercaptan, dimethyl disulfide, butyl mercaptan, diethyl sulfide, dimethyl disulfide, thiophene and tetrahydrothiophene. The GC column listed in paragraph 8.2 may be used to resolve the high molecular weight compounds.

9.2.1 Analysis of Low Molecular Weight Sulfur Compounds. The sample valve in the analytical system is heated by use of a heated box or other means to prevent condensation of moisture. Inject a sample of diluted sample or undiluted sample into the analytical system and record the resultant chromatogram. Measure the peak height. Identify the peaks by comparing their retention times to those established during calibration. Determine the concentration of each reduced sulfur compound detected directly from the calibration curves.

9.2.2 Analysis of High Molecular Weight Sulfur Compounds. The procedure is essentially the same as above except that the stripper column is needed.

9.2.3 Sample Runs. A sample run is composed of 16 individual analyses (separated by 5 minutes) over a period of not less than 3 hours or more than 6 hours.

9.2.4 Interference for Flaming of Products of reactions in sample combustion are observed during a sample run that cannot be explained by known conditions, the sample run shall be invalidated. If flame conditions (for example, flameout) are interrupted, re-ignition is to be attempted. If re-ignition is not successful within 2 minutes, the sample system must be purged with particulate free air. After each run, the sample probe must be inspected and if necessary, disassembled and cleaned.

10 Post-Test procedures.

10.1 Recalibration. After each run, or after a series of runs made within a 24 hour period, perform a partial recalibration using the procedures in Section 8. Only the multipoint need be used to recalibrate the low molecular weight analysis system (8.5) and the dilution system (8.6).

10.2 Determination of Calibration Drift. Compare the calibration curves obtained prior to the runs to the calibration curves obtained under paragraph 10.1. The calibration drift must not exceed the limits set forth in paragraph 6.2. If the drift exceeds this limit, the intervening runs or some must be considered not valid.

11 Calculations.

11.1 Determine the concentrations of each reduced sulfur compound detected directly from the calibration curves.

11.2 Calculation of TRS. Total reduced sulfur will be determined for each analysis made by summing the concentrations of each reduced sulfur compound resolved during a given analysis.

$$TRS = \sum_{i=1}^{n} H_2S_i + \sum_{i=1}^{n} RSR_i$$

Equation 16-2

Where:

TRS = Total reduced sulfur concentration in ppm.

$\sum_{i=1}^{n} H_2S_i$ = Sum of the hydrogen sulfide concentrations in ppm.

$\sum_{i=1}^{n} RSR_i$ = Sum of the reduced sulfur concentrations in ppm.

n = Number of reduced sulfur compounds.

11.3 Average TRS. The average TRS concentration is calculated as follows:

$$\text{Average TRS} = \frac{\sum_{i=1}^{n} TRS_i}{n}$$

Equation 16-3

Where:

$\sum_{i=1}^{n} TRS_i$ = Sum of the TRS concentrations in ppm.

n = Number of runs.

12 Bibliography.

12.1 O'Keefe, A. E. and Ortman, G. C. "Primary Standards for Trace Gas Analysis." Anal. Chem. 38 760 (1966).

12.2 Rehme, K. B., O'Keefe, A. E. and Stevens, R. K. "Accurate Calibration of a Flame Photometric Detector for Volatile Sulfur Compounds at Sub-Part-Per-Million Level." Environmental Science and Technology 3, 1 (Jan. 1969).

12.3 Stevens, R. K., Rehme, K. E. and Bennett, B. "An Analytical System Designed to Measure Atmospheric Malodorous Sulfur Gases at Sub-Part-Per-Billion Concentrations." Presented at the 1970 Conference on Methods in Air Pollution and Industrial Hygiene Studies, University of Southern California, Los Angeles, CA, April 8-10 (1970).

12.4 Devonald, R. F., Barrows, R. E. and Metzger, R. D. "Evaluation of the Flame Photometric Detector for Analysis of Sulfur Compounds." Pulp and Paper Magazine of Canada 73, 3 (March 1972).

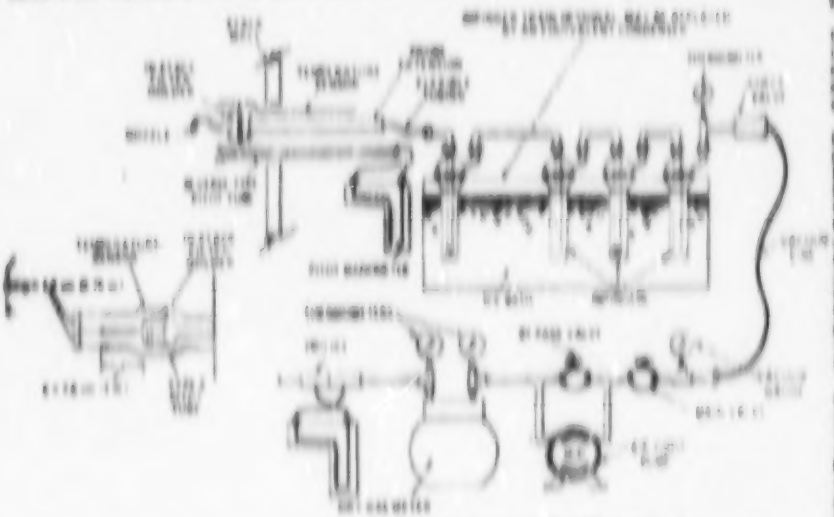
12.5 Grimley, R. W., Smith, W. S. and Martin, R. M. "The Use of a Dynamic Dilution System in the Conditioning of Stack Gases for Automated Analysis." A Specific Report for Automated Analysis by a Specific Sampling System, presented at the 64th Annual Air Pollution Control Association Meeting, Atlantic City, NJ, June 24 to 28, 1971.

12.6 General Reference Standard Methods of Chemical Analysis, Volume III A and B, Instrumental Methods, Sixth Edition, Van Nostrand Reinhold Co.

Methods 17—Determination of Particulate Emissions From Stationary Sources (Asbestos Fiber Measurement Method).

Particulate matter is not an absolute quantity. Rather it is a variable which is a function of temperature and pressure. For this reason, particulate matter emission regulations and associated test methods must define or take cognizance of the temperature and pressure of the particulate matter to be measured. If temperature is not defined and if the effect of temperature upon the quantity of particulate to be collected is not known, then the particulate emission regulation must be considered unenforceable. The range of pressures encountered in stack sampling is of negligible importance.

In Method 5, [illegible] is specified as a nominal [illegible] temperature of [illegible] 250° F. [illegible] is specified under an assumption that particulate matter is defined as any material that exists as a solid at this temperature. Method 5 [illegible] this undefined temperature. Method 5 [illegible] a heated glass sample probe and a heated glass or glass fiber sample filter to withdraw and remove from the gas stream particulate matter. Particulate matter collected on the heated filter is defined as that particulate matter emitted from a source which will not pass through the filter if the gas sample is withdrawn from the stack at a temperature of [illegible] and passed through the filter at this temperature. Particulate matter collected in the impinger portion of the train is defined as that particulate matter which will pass through the filter but will not condense and be collected in the impinger if the gas sample is withdrawn from the stack at a temperature of [illegible] and passed through the filter at this temperature. Particulate matter



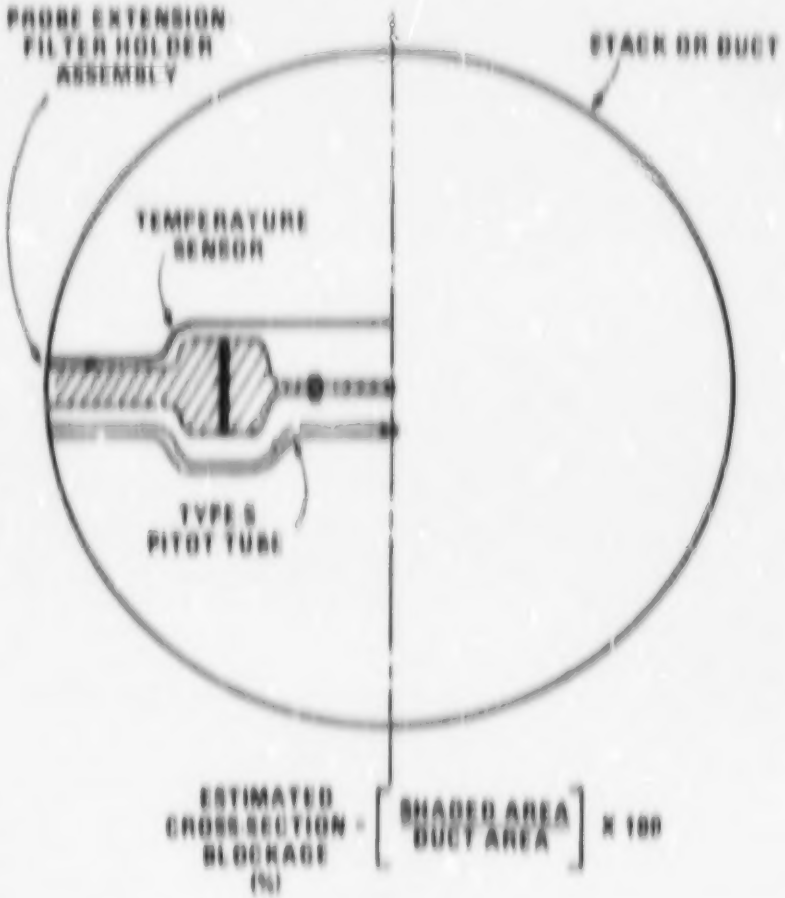


Figure 17-2. Projected area model of cross section blockage (approximate average for a sample traverse) caused by in-stack filter holder probe extension assembly.

[illegible]

[illegible]

[illegible]									

[illegible] plant weighing dish and desiccate for [illegible] hours or [illegible] constant weight (i.e., [illegible] weight change between successive weighings of no more than 0.5 mg or 1% of total weight less, less weight, whichever is greater). To expedite the drying process, [illegible] may be dried for a period of time sufficient to minimize the [illegible] and to remove the bulk of the water, but not long enough to cause the filter to become dessicated. The [illegible] must be less than 50% relative humidity during weighing.

Plant _____

Date _____

Run No. _____

Relative Humidity _____

Amount liquid lost during transport _____

Acetone blank volume, ml _____

Acetone wash volume, ml _____

Acetone blank concentration, mg/g (equation 17-4) _____

Acetone wash blank, mg (equation 17-5) _____

CONTAINER NUMBER	WEIGHT OF PARTICULATE COLLECTED, mg		
	FINAL WEIGHT	TARE WEIGHT	WEIGHT GAIN
1			
2			
TOTAL			
Less acetone blank			
Weight of particulate matter			

	VOLUME OF LIQUID WATER COLLECTED	
	CONDENSATE VOLUME, ml	SILICA GEL WEIGHT, g
FINAL		
INITIAL		
LIQUID COLLECTED		
TOTAL VOLUME COLLECTED		g / ml

CONVERT WEIGHT OF WATER TO VOLUME BY DIVIDING TOTAL WEIGHT INCREASE BY DENSITY OF WATER (1 g/ml)

$$\frac{\text{INCREASE, g}}{1\ \text{g/ml}} = \text{VOLUME WATER, ml}$$

Figure 17-4. Analytical data.

Equation 17-1

Equation 17-2

Equation 17-3

Equation 17-4

Equation 17-5

Equation 17-6

[redacted]

[redacted]

[redacted]

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 606-6]

KRAFT PULP MILLS

Standards of Performance for New Stationary Sources; Correction

In FR Doc. 76-27186 appearing at page 43013 in the FEDERAL REGISTER of September 24, 1976, the following changes should be made:

1. On page 43013, paragraph 3 line 10 is corrected to read as follows: "0.0135 g/Mg ADP is proposed for small".

2. On page 43016, § 60.282(a)(1)(i) is corrected to read as follows:

§ 60.283 Standard for total reduced sulfur (TRS).

(a) * * *

(1) * * *

(i) From any smelt dissolving tank any gases which contain TRS in excess of 0.0135 g/Mg ADP (0.033 lb/ton ADP);

3. On page 43020, Equation 19-9 is corrected to read as follows:

$$*E_{SO_2} = C_{SO_2}(P_{SO_2}, M_{SO_2}, E_{SO_2}, \%O_2)$$

4. On page 43021, Equation 19-19 is corrected to read as follows:

$$E_{SO_2} = \frac{(100)\ F_c(K)_{SO_2}(Y_{Na}/Y_{fo})\ (C_{SO_2} + A_{SO_2}/(1-B_{ws}))}{(100-P_s)\ A_s}$$

Dated: October 21, 1976.

Rowena P. Tyree,
Acting Assistant Administrator for Air and Waste Management.

[FR Doc 76-31555 Filed 10-28-76 8:45 am]

[40 CFR Part 60]

[FRL 606-8]

KRAFT PULP MILLS

Standards of Performance for New Stationary Sources; Extension of Comment Period

On September 24, 1976 (41 FR 43013), the Environmental Protection Agency (EPA) proposed standards of performance for the control of emissions from kraft pulp mills. The notice of proposal requested public comments on the standards by November 23, 1976 due to a delay in the printing and shipping of the Standards Support and Environmental Impact Statement sufficient copies of the document have not been available to all interested parties in time to allow their meaningful review and comment by November 23. The public comment period is therefore being extended to allow additional time for all interested parties to participate in this rulemaking. EPA has received a request from the industry to extend the comment period by 60 days through January 7, 1977. An extension of this length does not, however, seem justified because the printing and shipping delay has resulted in only a two-week delay in processing requests for the document. EPA has therefore determined that the comment period will be extended by three weeks and all comments postmarked by December 13, 1976 will be considered. Comments should be submitted (in triplicate) to the Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin.

Dated: November 19, 1976.

Roger Strelow,
Assistant Administrator for Air and Waste Management.

[FR Doc 76-34561 Filed 11-22-76 8:45 am]

ENVIRONMENTAL PROTECTION AGENCY

■

GRAIN ELEVATORS

Standards of Performance for
New Stationary Sources

SUBPART DD

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 60]

[FRL 60-1]

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Grain Elevators

Notice is hereby given that under the authority of section 111 of the Clean Air Act as amended, the Administrator is proposing standards of performance for new, modified and reconstructed grain elevators.

Proposed Standards

The proposed standards would limit emissions of particulate matter from eight affected facilities and the air pollution control devices on these facilities at grain elevators. The standards apply to farm and country elevators, terminal elevators and subterminal elevators. Grain elevators usually have grain receiving areas, storage areas, and shipping areas. Grain is received by truck or railroad car, stored, and then shipped by truck, railroad car, or barge. Grain elevators usually have a number of grain handling operations, such as scalping, cleaning, drying, and conveying. Grain elevators usually have a number of grain storage facilities, such as bins, silos, and tanks. Grain elevators usually have a number of grain shipping facilities, such as loadout spouts and loadout bins. Grain elevators usually have a number of grain receiving facilities, such as truck dumps and railroad car dumps. Grain elevators usually have a number of grain handling facilities, such as conveyors, elevators, and scales. Grain elevators usually have a number of grain storage facilities, such as bins, silos, and tanks. Grain elevators usually have a number of grain shipping facilities, such as loadout spouts and loadout bins.

Environmental Impact

The proposed standards would limit emissions of particulate matter from eight affected facilities and the air pollution control devices on these facilities at grain elevators. The standards apply to farm and country elevators, terminal elevators and subterminal elevators. Grain elevators usually have grain receiving areas, storage areas, and shipping areas. Grain is received by truck or railroad car, stored, and then shipped by truck, railroad car, or barge. Grain elevators usually have a number of grain handling operations, such as scalping, cleaning, drying, and conveying. Grain elevators usually have a number of grain storage facilities, such as bins, silos, and tanks. Grain elevators usually have a number of grain shipping facilities, such as loadout spouts and loadout bins. Grain elevators usually have a number of grain receiving facilities, such as truck dumps and railroad car dumps. Grain elevators usually have a number of grain handling facilities, such as conveyors, elevators, and scales. Grain elevators usually have a number of grain storage facilities, such as bins, silos, and tanks. Grain elevators usually have a number of grain shipping facilities, such as loadout spouts and loadout bins.

Economic Impact

The proposed standards would reduce the amount of particulate matter emitted from new grain elevators by [illegible] more than [illegible] percent. Estimates for [illegible] new grain elevators that would be affected by the standards indicate that the [illegible] or emissions that would be required by the proposed standards would be [illegible] percent less than the level required by typical State standards. The reduction in emissions would be a consequence of a reduction of particulate matter emitted from grain elevators. The reduction in emissions would be a consequence of a reduction of particulate matter emitted from grain elevators. The reduction in emissions would be a consequence of a reduction of particulate matter emitted from grain elevators. The reduction in emissions would be a consequence of a reduction of particulate matter emitted from grain elevators.

particulate matter in the exhausts of grain elevators. The maximum 24-hour average concentration of a pollutant is the highest concentration of a pollutant at a distance of 0.5 kilometers from the nearest facility. The proposed standards would require a reduction of 50 to 70 percent in the maximum concentration of particulate matter emitted from grain elevators. The proposed standards would require a reduction of 50 to 70 percent in the maximum concentration of particulate matter emitted from grain elevators. The proposed standards would require a reduction of 50 to 70 percent in the maximum concentration of particulate matter emitted from grain elevators.

The secondary environmental impacts of the proposed standards would be minor. There would be no impact on water pollution because only dry type collectors would be used to control particulate emissions. Minimal additional solid waste handling or disposal problems would be caused by the standard. Approximately 99 percent of the grain dust collected by emission control devices at elevators is returned to the grain. 90 percent is sold for use in feed manufacturing and 9 percent is disposed of as solid waste. The additional grain dust collected by a more efficient control device would either be sold for feed or landfilled. The proposed standards would have no adverse impacts on noise and land use considerations. A relatively minor amount of particulate matter, sulfur dioxide, and nitrogen oxides would be discharged into the atmosphere from power plants supplying the additional electrical power that would be required to operate the control devices needed to achieve the proposed standards.

The incremental energy required above the typical State standard levels to operate the proposed standards to control the emissions from a typical grain elevator is equivalent to about [illegible] percent of the total energy consumed by that facility. This indicates that the proposed standards would have a minor impact on the consumption between natural gas and electricity supplies. The minor requirements of the proposed standards result from the use of fabric filter control instead of the less efficient control requirements. The total air pollution control energy that would be required to meet the proposed standards represents approximately [illegible] percent of the total process energy requirements of new grain elevators. This is an increase of about [illegible] percent above the energy presently needed to meet typical State standard requirements for new grain elevators.

The proposed standards would affect the economics of grain elevators in the near future. The incremental control costs of the proposed standards over typical State control requirements is estimated to be [illegible] million in calendar year [illegible] and [illegible] million in the first full year after promulgation. In addition, the proposed standards would result in a total annual production cost of [illegible] percent above a typical State standard. This cost is based on [illegible] per [illegible] and a selling price of [illegible] per [illegible]. This cost includes the cost imposed by the proposed standards on grain production from the farm to the port terminal elevator. The maximum cost added to the grain as a result of the proposed standards at an individual grain elevator would be less than one cent per bushel. The effect that the proposed standards would have on supply and demand of grain and grain products and on the future growth of the grain industry is considered negligible. In the judgment of EPA, these costs are considered reasonable for new, modified and reconstructed sources.

EPA has determined that this document does not contain a major proposal requiring preparation of an Inflation Impact Statement under Executive Order 11821 and OMB Circular A-107.

Reasons for Proposed Standards and Affected Facilities

Section 111 of the Clean Air Act directs the Administrator to establish standards of performance for stationary sources that may contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare. Also under section 108 of the Act, particulate matter has been designated as a criteria pollutant and National Ambient Air Quality Standards (NAAQS) have been set for particulate matter.

It is estimated that the grain elevator industry, which consists of about [illegible] grain elevators located nationwide, emits [illegible] megagrams per year (Mg per year) of particulate matter. In a study performed for EPA by the Research Corporation of New England, the significant sources of particulate matter were identified and ranked in order of total emissions. Four grain handling operations were shown to be significant sources of particulate processing and ranked first. Truck dump was ranked seventh, cleaning and screening was ranked tenth, and drying was ranked number thirty-three among all known sources of particulate emissions. In addition, the report of the Committee on Public Works of the United States Senate listed grain elevators as a source for which standards of performance should be developed.

Growth in the grain elevator and grain processing industries is expected to be slow since the per capita consumption of grain products is remaining constant or decreasing. The total number of grain elevators is expected to decrease. However, the total throughput of grain is expected to increase slightly as the processing plants and oilseed crushers have significant demand for grain in new storage capacity. Because projections for the increase are less than 25 percent in the United States or less than 25 percent in Approximately [illegible] new, modified or reconstructed grain elevators are ex-

packed to be constructed by 1981. This growth rate of about 100 grain elevators per year is considered to be significant.

EPA has determined that particulate emissions from grain elevators contribute significantly to air pollution which causes or contributes to the endangerment of the public health. For this reason, the source category of grain elevators has been selected for establishing new source performance standards.

The proposed standards would apply to affected facilities that handle wheat, corn, soybeans, milo, rice, oats, or barley. These grains were selected to be subject to the standards because they are the primary grains produced in the United States. There are several other grains (e.g., millet) but these crops are grown and handled in small quantities. Therefore, the handling of these grains is not considered a significant source of particulate matter at this time.

Animal pet food and cereal manufacturers, breweries, and feedlots also handle and process whole grain. These industries were beyond the scope of the background industry studies. Consequently, no data are available on these sources and they are not subject to the proposed standard. In addition, there are relatively few plants in these peripheral industries.

Consideration was given to classifying an entire grain elevator, including all its various functions, as the affected facility. If this were done, however, modification or reconstruction of a substantial portion of an existing grain elevator would make the entire elevator subject to the proposed standard. Since this is not considered reasonable, the operations at grain elevators were classified into eight affected facilities. The affected facilities are: Each truck unloading station (each railroad hopper car and barge unloading station equipment at each barge and truck unloading station); all grain handling operations; each grain dryer; each truck loading station; each railroad hopper car and barge loading station; and each barge and ship loading station. There are several advantages to examine the separate operations as affected facilities. For example, unloading stations and loading stations are often physically separated from other parts of the elevator and often have separate capture systems and air pollution control devices. Modification or reconstruction of one of these facilities would make it but not the entire elevator subject to the proposed standards. This is desirable because there can be an increase in the unloading or loading capacities without affecting other facilities at the elevator.

Grain handling operations are grouped as one affected facility since they have similar operating capacities and air pollution control devices. Frequently, more several pieces of handling equipment. Modification of one part of the grain handling system will rarely require modification of other parts of the system. Therefore, the whole handling system would be subject to the proposed standards.

Rationale

The purpose of the proposed standards is to require that best demonstrated emission control technology, considering costs for particulate matter be installed and operated at new, modified, and reconstructed grain elevators. The proposed standards would ensure pollutant containment and proper air flow maintenance of dust generation as well as proper operation and maintenance of air pollution control devices. The individual emission sources covered by the proposed standards include all sources of fugitive emissions generated by process equipment, and process exhaust gas streams at grain elevators which are significant sources of particulate matter.

It should be noted that standards of performance for new sources established under section 111 of the Act reflect emission limits achievable with the best adequately demonstrated systems of emission reduction considering the cost of such systems. State implementation plans (SIP's) approved or promulgated under section 110 of the Act, on the other hand, must provide for the attainment and maintenance of National Ambient Air Quality Standards (NAAQS) designed to protect public health and welfare. For that purpose, SIP's must in some cases require greater emission reductions than those required by standards of performance for new sources. In addition, States are free under section 116 of the Act to establish more stringent emission limits than those established under section 111 or those necessary to attain or maintain the NAAQS under section 110. Thus, new and existing sources may in some cases be subject to limitations more stringent than EPA's standards of performance under section 111.

The proposed standards for grain elevators are based largely on results of a previous EPA-sponsored investigation of air pollution emissions and control techniques in the grain and feed industry. This earlier study included the responses from the owners or operators of elevators throughout the country to a questionnaire on the air pollution aspects of their operations. The proposed standards are also based on data concerning emission control systems and methods of process operation received through on-site observations of plant operations and control systems, consultation with industry representatives and manufacturers of control systems and devices, emission tests conducted by EPA and operators of grain elevators, and meetings with industry associations and the National Air Pollution Control Techniques Advisory Committee.

Particulate emissions from the affected facilities at a grain elevator (excluding emissions from air pollution control devices) are considered fugitive emissions. These emissions are discharged from an exhaust area that is usually very large. Therefore, it is difficult to apply the usual particulate source test methods (designed for measuring stack emissions) to affected facilities at grain elevators. In addition, numerous difficulties such as low exit gas velocity, skewed exit velocity, variability of particulate concentration and velocity over the exit area, and the variability in the design of exhaust areas make source testing impractical. EPA has concluded that practical and feasible methods for measuring the mass of fugitive emissions from affected facilities at grain elevators are not available at this time. Therefore, neither mass nor concentration standards have been proposed for affected facilities at grain elevators. The remaining options for regulating emissions are visible emission opacity standards and equipment standards. The proposed standards include visible emission opacity standards for six affected facilities, an opacity standard with the alternative of using certified equipment for one affected facility, and an equipment standard for one affected facility. A concentration standard and an opacity standard are proposed for air pollution control devices.

The proposed visible emission standards include zero percent, 10 percent and 15 percent opacity standards and a no visible emission standard. These various visible emission standards are necessary because of the different characteristics of the emissions from the affected facilities. The no visible emission limit means that an inspector viewing a source would see no visible emissions without the aid of instruments. This is achievable when an affected facility is totally enclosed with proper ventilation. With this control system, no visible emissions escape to the atmosphere. The emissions from facilities subject to the zero or greater percent opacity level would be evaluated according to EPA Reference Method 9. Reference Method 9 specifies that 24 observations be taken at 15-second intervals and averaged over a six-minute period. The individual observations are recorded to a percent increment (0, 5, 10, etc.); however, averaging 24 observations may result in a six-minute average which is not a whole number. The six-minute average is to be rounded off to the nearest whole number following the standard rules of rounding (e.g., 9.49 would be rounded off to 9; 9.50 would be 10; 11 would be 9 etc.). This means that an affected facility subject to a zero percent opacity standard could have one of 24 observations at 5 percent opacity and the other 23 observations at 0 percent opacity and still be in compliance. The six-minute average in this case would be 4.8 percent and would be rounded off to 5 percent, the nearest whole number.

Grain Dryers

The current trend in the grain elevator industry is to install column dryers instead of rack dryers. At country elevators and this trend is expected to continue. The trend has developed primarily because typical batch dryers (dryers that rack dryers) be operated with a 20 to 30 mesh screen for air pollution control, whereas no air pollution control device is usually required for column dryers.

This gives a significant capital and operating cost advantage to the column dryer. EPA believes the majority of new, modified, or reconstructed dryers will be column dryers; however new rack dryers may be installed in high throughput elevators because maintenance costs appear to be low for rack dryers in these applications.

Emissions from grain dryers are discharged from an exhaust area that is usually very large. Therefore, it is not technologically or economically feasible to apply the usual particulate source test methods designed for measuring stack emissions to this source. Several attempts to carry out source tests were made by EPA and by operators of grain elevators. The data collected however, can only be used as a guide in developing a standard due to the numerous difficulties encountered in the measurement technique. The accuracy and precision of the techniques are not sufficient for determining compliance. EPA has concluded that methods for measuring mass particulate matter emissions from grain dryers are not available at this time. The only practical and feasible method of measuring particulate matter emissions from grain dryers is visible emission determinations.

EPA considered several alternate control systems for grain dryers in developing the proposed standards. The alternatives considered for column dryers were an screen filter with a perforation size range of 1.25 to 1.1 mm (a .050 to .045 inch) and a recirculating screen filter (all metal and the mesh screen size). The alternatives considered for rack dryers were a screen filter (all metal screen size) and a recirculating screen filter (all metal and the mesh screen size). The factors evaluated in considering these alternatives included the amount of emissions (visible and mass), capital costs, annual costs, energy requirements, operating and maintenance problems, and trends in the industry to use certain types of equipment. After considering all of these factors, EPA concluded that the best system of emission reduction (considering costs) is a column dryer equipped with recirculate perforation diameters of 1.1 mm (a .045 inch) or less and a rack dryer equipped with a 50 mesh screen filter. Both of these systems are considered economically reasonable and demonstrate in control of particulate matter emissions.

A zero percent opacity standard based on six-minute averages is proposed for all grain dryers. The owner or operator of any column dryer would be required to comply with the standard provided the diameter of all recirculate perforations do not exceed 1.1 mm (a .045 inch), and the owner or operator of any rack dryer would be required to comply provided all exhaust gases pass through a 50 or finer mesh screen filter. EPA observed one column dryer of two different designs with perforation plate diameters ranging from 1.25 to 1.1 mm (a .050 to .045 inch). A total of 18 six-minute opacity averages were obtained. EPA observed two rack dryers, one equipped with a 50 mesh recirculating screen filter, and the other with no screen filter. A total of 5 six-minute opacity averages were obtained at the dryer equipped with the 50 mesh screen. Based on the available data, EPA concluded that a standard of zero percent opacity can be achieved by the best system of emission reduction (considering costs) for grain dryers.

Air Pollution Control Devices

EPA separately considered the capture systems at various grain operations and the air pollution control devices used to remove the captured particulate matter from the gas stream before discharge to the atmosphere. The proposed standards would require an pollution control devices on all affected facilities at a grain elevator (except grain dryers and some types of dust tight grain handling operations). EPA measured particulate matter emissions according to Reference Method 5 except that the probe was not heated from eleven grain processes controlled with fabric filters. EPA did not measure emissions from cyclones, but estimated that emissions from grain processes controlled by cyclones average a factor of 10 times those from fabric filter control devices. Based on these data, EPA has determined that the best demonstrated air pollution control device considering costs for grain operations is a fabric filter.

EPA considered both mass and concentration units for the proposed standards. The basic difference is that a standard which restricts the mass rate of emissions would limit the total mass emitted, whereas a standard with concentration units would allow the mass rate to increase in direct proportion to the volume of gas exhausted through the control device. This is an advantage for concentration units for grain elevators since a standard with concentration units does not discourage use of large volumes of ventilation air. As one might surmise, adequate capture velocity at the collection hood is necessary for complete capture of the particulate matter generated by the process. Another advantage of concentration units is that the emission test provides all information necessary for enforcement determination of mass emissions per volume of gas discharged through the control device. Mass standards, however, are usually based on a unit of product or raw material to the process. They require an accurate determination of both mass or volume and product or raw material weight. Product and raw material weights are obtainable only from an operator and are often difficult parameters to measure. This is particularly true for grain elevator operations for the following reasons:

1. The weight of grain handled or received by the owner or operator is generally not measured.

2. If more than one process is controlled by a single collector (i.e., several houses filter), it may be impossible to determine the process weight during performance testing. When a standard with concentration units is applicable to each process, compliance for any number of processes can be determined only by measuring the concentration from the control device.

The average concentration of particulate matter emissions from all the grain processes tested, excluding one which had high emissions due to process irregularities, was 0.007 g/std m³ dry basis. Most of the individual test results were below 0.003 g/std m³ dry basis. Therefore, EPA selected 0.003 g/std m³ dry basis as the emission limit for the proposed standards. To meet this emission limit, it would be necessary for grain operations to install and properly operate fabric filter control systems rather than less effective control systems such as high efficiency cyclones.

A zero percent opacity standard (based on six minute averages) is also proposed for all pollution control devices. EPA observed two fabric filter systems on grain processes and all of the individual readings, a total of 58 six-minute averages, were no visible emissions. EPA believes that the proposed standard of zero percent opacity would ensure the proper operation and maintenance of the air pollution control device.

Truck and Railcar Unloading Stations

The demonstrated methods for controlling particulate matter emissions from truck and railcar unloading operations include a collection hood in the receiving hopper ventilated to an air pollution control device and a protective enclosure around the facility to reduce the interfering effect of winds (generally, enclosures or sheds are used to protect the grain and workers from inclement weather). In some locations, however, where the weather is hot, (both dry) unloading stations do not have sheds. In developing the proposed standards, EPA determined that a protective enclosure is required to prevent wind from interfering with the effectiveness of particulate capture by the hopper ventilation system. Three alternatives were evaluated by EPA concerning protective enclosures of the unloading station: (1) a shed with two open ends; (2) a shed with one open end and (3) a totally enclosed shed. A shed with two open ends was determined to be least effective because it allows the wind to blow directly through and over the receiving hopper. A shed with one open end and a totally enclosed shed were found to diminish the effects of wind upon the ventilation system.

The totally enclosed shed has been demonstrated in rain or inclement and hot weather unloading operations where the two ends of the shed are equipped with quick-operative doors. However, all of the truck unloading facilities inspected by EPA were designed so that the front end of the truck extends out from the open end of the shed (some reduction in particulate emissions could be achieved by totally enclosing the truck unloading operation, however EPA knows of no economical and practical method to totally enclose the operation the shed would have to be increased in both

length and height because the front ends of the trucks are raised considerably to allow the grain to flow out the rear of the truck. This would increase the cost of the shed substantially. In addition truck unloading operations are located at all small country elevators. Therefore, increased costs would be incurred, especially at small elevators, from the use of a completely enclosed shed on truck unloading operations. Therefore, EPA has concluded that the best demonstrated system of emission reduction (considering costs) for truck unloading stations is a shed with one open end and for railcar unloading stations it is a totally enclosed shed.

The system for railcar unloading would include a receiving hopper equipped with baffles and ventilated at a rate of approximately 450 to 710 actual cubic meters per minute (act m³/min) (16 000 to 25 000 acfm) depending on the size of the facility. The system for truck unloading would include a receiving hopper equipped with baffles and ventilated at a rate of approximately 340 act m³/min (12 000 acfm).

An emission standard of zero percent opacity (six-minute average) is proposed for truck unloading operations at grain elevators. A total of 138 six-minute opacity averages were gathered by EPA. The range for these six-minute averages is no visible emissions to one percent. A total of 120 six-minute averages were no visible emissions and 17 six-minute averages were zero percent opacity. Based on the available data, EPA concluded that a standard of zero percent opacity can be achieved by the best demonstrated system of emission reduction (considering costs) for truck unloading.

The proposed standard for railcar unloading (boxcars and hopper cars) is no visible emissions. A total of two hours of visible emission opacity data were gathered by EPA on a boxcar unloading operation. Every data point taken at 15-second intervals indicated no visible emissions. Data to substantiate the proposed standard were not collected for hopper car unloading operations. However, EPA has observed that unloading of boxcars is a dustier operation than unloading of hopper cars. Therefore, the proposed standard applies to both hopper cars and boxcars. Based on the available data, EPA concluded that a standard of no visible emissions can be achieved by the best system of emission reduction (considering costs) for railcar unloading.

Boxcar and Hopper Unloading Stations

An equipment standard is proposed for barge and ship unloading operations. EPA observed the levels of visible emissions at a barge unloading station. The resulting data showed an extremely wide range of visible emissions with some six-minute averages above 8% percent opacity. EPA concluded that an opacity standard could not be established that would ensure the installation of the best system of emission reduction (considering costs) because of this wide range of visible emissions.

All of the bucket elevators (legs) observed by EPA at barge and ship unloading stations during the development of the proposed standards had various types of enclosures and were ventilated. A facility with the leg enclosed from the top (including the receiving hopper) to the center line of the bottom pulley appeared to perform with the least emissions. This facility was observed in operation with and without the ventilation system in operation. Visible emissions were observed to be significantly lower when the ventilation system was operating than when it was not. EPA concluded that this system represents the best demonstrated system of emission reduction (considering costs) and proposes an equipment standard based on the design of this system.

Grain Handling Operations

Particulate matter emissions from grain handling operations can be minimized through the use of totally enclosed equipment, by handling the grain at a slower rate, or by using ventilated hooding systems designed to capture emissions.

Separate data were not obtained on each item of grain handling equipment included under grain handling operations. However, during observation of the headhouse, the items included under this affected facility were in operation. An exterior conveyor and a headhouse were observed and all data recorded were no visible emissions. A zero percent opacity standard has been proposed instead of no visible emissions because zero percent opacity (six-minute average) allows the possibility of slight emissions from the headhouse. EPA has concluded that the best demonstrated systems of emission reduction (considering costs) for grain handling operations are totally enclosed equipment or handling systems ventilated to air pollution control devices.

Truck and Railcar Loading Stations

During the development of the proposed standards, EPA could not locate a truck loading operation in the grain industry that used what was considered to be the best system of emission reduction that could be applied. Therefore, other industries such as lime and flour and grain processing were studied in an attempt to find well controlled truck loading operations in these industries. EPA located and observed a soybean meal truck loading operation. This operation is well controlled; however, it does not have what is considered to be the best system of emission reduction. Loading soybean meal into trucks was determined by EPA to be as dusty an operation as loading grain into trucks. Therefore, a direct transfer of technology to grain loading operations is possible. The ten percent opacity limit is based on data gathered at this facility. EPA believes that a better control system can be designed than the one observed; however, this is the best system that has been demonstrated for truck loading operations which are very similar to grain loading operations. EPA has concluded that the best system of emission reduction (considering costs) for truck loading stations is a shed with one open end, equipped with a loading spout with a canvas sleeve and a hooding system ventilated at a rate of about 280 to 420 act m³/min (10 000 to 15 000 acfm).

Particulate matter emissions which result from the loading of grain into hopper cars is controlled in the grain industry by a hooding system ventilated to an air pollution control device located at the end of the loading spout. The loading operation is usually enclosed in a shed with two open ends. This control method is the most effective demonstrated particulate control system used for loading grain into hopper cars. The type of loading and the ventilation rates are the only variables. Several hopper car grain loading systems were studied by EPA by reviewing the manufacturer's designs of the systems and through communications with grain elevator operators and plant engineers. EPA gathered data from the operation which was determined to be the most effective system. The individual 15-second opacity data collected were all zero percent opacity or no visible emissions. There was no appreciable wind during this observation period. Therefore, EPA has proposed a zero percent opacity limit to allow for possible slight particulate emissions during other than ideal conditions. EPA has concluded that the best system of emission reduction (considering costs) for railroad hopper car loading stations is a shed with two open ends and a hooding system located next to the loading spout which is ventilated at a rate of about 280 act m³/min (10 000 cfm).

The grain industry has essentially only one demonstrated particulate control system for loading boxcars. The entire operation is usually enclosed in a shed with two open ends. EPA took opacity observations on the only controlled facility which was found. The data ranged from three to five percent opacity. The operation observed, however, was not considered to employ the best control technology that could be applied. The facility could have been maintained in better condition and higher ventilation rates could have been used.

Hopper car loading and boxcar loading operations are similar and best technology requires a shed with two open ends and a hooded loading spout ventilated to an air pollution control device or both facilities. The grain flows through a loading spout and is deposited in a receiving vessel (the railcar) at each facility. Fugitive particulate matter emissions are also generated in a similar manner. The stream of grain and induced air flowing into the railcar bursts and displaces the air in the railcar. Also, when the grain impacts against the receiving vessel turbulence is created in the surrounding air. Particulate matter can be entrained in the turbulent air currents and flow out of the railcar with the displaced air. EPA is proposing a zero percent opacity standard on railcar loading stations based on a transfer of

technology from hopper car loading stations.

EPA has concluded that the best system of emission reduction (considering costs) for railroad hopper loading stations is a shed with two open ends. A loading spout enclosed by a small building like structure which extends to within 150 mm (6 inches) of the side of the hopper and hinged doors about one mm (ca. 8 inches) wide, equipped with rubber flaps which seal the sides of the enclosure to the hopper are part of this dust control system. This building-like structure is ventilated at a rate of about 300 scf m/min (ca. 10,000 cfm).

Waste and Water Loading Stations

EPA considered two systems for controlling particulate matter emissions from barge and ship loading. The first consists of a telescoping loading spout that is actuated by the elevation of the grain surface as loading progresses. Ventilation is applied at the end of the spout and then vented to a fabric filter. Two variations of this system were observed by EPA. The second system considered was to cover the hold with canvas or plastic sheeting except where the loading spout enters. However, no system of this type was observed in operation. EPA believes both control systems can achieve the proposed opacity standard.

Data were gathered from a ship loading operation employing the first control approach mentioned. The data revealed that during telescoff operations recorded opacities were greater than during the general loading operation. EPA therefore has proposed a less stringent opacity standard for barge and ship loading operations. General loading operations have a 10 percent opacity limit and topping-off operations have a fifteen percent opacity limit.

EPA has no data on loading grain into barges. However, EPA has visited barge loading operations and believes the operations to be similar to ship loading operations. Therefore, the proposed standards apply to barge loading as well as to ship loading.

Testing and Recordkeeping

Under the proposed standards, performance tests for particulate matter emissions would be required for all affected facilities. Particulate matter would be measured by Reference Methods 1 through 5 and 17 (EPA Reference Method 17 was proposed in the Standards of Performance for Kraft Pulp Mills on September 24, 1976 (41 FR 42560)).

The definition of particulate matter has been revised to allow any condensed by the reference method specified under each applicable subpart. This definition has been revised because Method 17 has been proposed as a reference method for particulate matter.

Records of performance tests and measurements would have to be maintained and retained for at least two years following the date of the measurements by owners or operators subject to the proposed regulations. This requirement is included under section 60.7(d) of the regulations.

Public Participation

As prescribed by section 111, this proposal of standards of performance has been preceded by the Administrator's determination that grain elevators contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare and by the publication of the determination in this issue of the Federal Register. In accordance with section 117 of the Act, publication of these proposed standards was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies.

Interested persons may participate in this rulemaking by submitting comments in triplicate to the Emission Standards and Engineering Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin. The Administrator will welcome comments on all aspects of the proposed regulations, including the declaration of grain elevators as a significant contributor to air pollution which causes or contributes to the endangerment of public health or welfare, economic and technological issues, and on the proposed test methods.

Comments are invited specifically on the proposed standard for railroad unloading stations and its effect on the unloading of unit trains. A number of interested parties have expressed concern that the uncoupling of locomotives which would be required when operating a totally enclosed unloading shed would have an adverse economic impact. Comments on this issue should contain specific information and data pertinent to an evaluation of the magnitude of this impact and its severity.

In addition, EPA is interested in receiving comments on the selection of the best system of emission reduction considering costs for grain dryers. The comments should address the factors EPA used in evaluating the alternative emission control systems.

All relevant comments received on or before March 14, 1977 will be considered. Comments received will be available for public inspection and copying at the Public Information Reference Unit (Room 2922, EPA Library, 401 M Street, S.W., Washington, D.C. 20460).

Background information on the proposed standards of performance has been published in a document, Background Support and Environmental Impact Statement, Volume 1: Proposed Standards of Performance for the Grain Elevator Industry. This report presents the factors considered in the development of the proposed standards, including all alternate systems considered, and their impacts. Additional copies of this report may be obtained by writing to the Public Information Center (PM 213), Environmental Protection Agency, Washington, D.C. 20460.

Authority

(Secs. 111, 114 and 301(a) of the Clean Air Act as amended by sec. 4(a) of Pub. L. 91-604, 84 Stat. 1678 and by sec. 15(c)(2) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-6 and 1857g(a)).)

Dated: January 6, 1977.

Jones Quarles,
Acting Administrator.

References

(1) Hooper, R. G. and R. A. Harmon. Report of Data Source Performance Standards for 1980 National Emissions from Stationary Sources Volume I. Environmental Protection Agency, Research Triangle Park, N.C. 1976. Publication No. EPA-450/3-76-031, October 25, 1976. pp. 42-50.

(2) Report of the Secretary on Public Grain Elevators. Senate Report No. 91-1162, September 17, 1970, pp. 12-17.

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

It is proposed to amend Part 60 of Chapter I of Title 40 of the Code of Federal Regulations as follows:

Subpart A—General Provisions

1. Section 60.2 is amended by revising paragraph (r). The revised paragraph reads as follows:

§ 60.2 Definitions.

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(r) "Particulate matter" means any finely divided solid or liquid material, other than uncombined water, as measured by the reference methods specified under each applicable subpart, or an equivalent or alternative method.

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2. Part 60 is amended by adding subpart DD as follows:

Subpart DD—Standards of Performance for Grain Elevators

Sec.
60.300 Applicability and designation of affected facility.
60.301 Definitions.
60.302 Standard for particulate matter.
60.303 Test methods and procedures.

Authority: Secs. 111, 114 and 301(a) of the Clean Air Act as amended by sec. 4(a) of Pub. L. 91-604, 84 Stat. 1678 and sec. 15(c)(2) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857c-6 and 1857g(a)).

Subpart DD—Standards of Performance for Grain Elevators

§ 60.300 Applicability and designation of affected facility.

The provisions of this subpart apply to the following affected facilities at any grain elevator except at farm elevators: country elevators, terminal elevators, and commercial type dryers having a total storage capacity of less than 2.5 million bushels (1 million bushels for rice) and at animal feed and cereal manufacturers, breweries and wheat gluten plants each with a total storage capacity of less than 1 million bushels: each railroad hopper car and truck unloading station equipment at any barge and ship unloading station; all grain handling operations; each grain dryer; each truck loading station; each railroad hopper car and barge loading station; and each barge and ship loading station.

§ 60.391 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) "Grain" includes corn, wheat, milo, rice, rye, oats, barley and soybeans.

(b) "Grain elevator" means any operation at which grain is unloaded, handled, loaded, dried or stored at any farm elevator, country elevator, terminal elevator, commercial rice dryer or storage elevator at which flour mills, wet corn mills, dry corn mills (human consumption), rice mills, or soybean oil extraction plants.

(c) "Control device" means the air pollution control equipment used to remove particulate matter generated by an affected facility at a grain elevator.

(d) "Capture system" means the equipment (including sheds, hoods, ducts, fans, dampers, etc.) used to capture or transport particulate matter generated by an affected facility at a grain elevator to the control device.

(e) "Fugitive emission" means the particulate matter generated by an affected facility at a grain elevator which is not collected by a capture system and is discharged to the atmosphere.

(f) "Grain unloading station" means that portion of a grain elevator where the grain is transferred from a truck, railcar, barge or ship to a receiving hopper.

(g) "Grain loading station" means that portion of a grain elevator where the grain is transferred from the elevator to a truck, railcar, barge or ship.

(h) "Grain handling operations" include bucket elevators or legs (excluding legs used to unload barges or ships), scale hoppers and surge bins (garners), turn heads, scalpers, cleaners, driers and the headhouse and other such structures.

(i) "Grain dryer" includes any equipment used to reduce the moisture content of grain.

(j) "Column dryer" means a grain dryer to which the grain flow is from the top to the bottom in one or more continuous, cooled columns between two perforated metal sheets.

(k) "Rack dryer" means a grain dryer to which the grain flows from the top to the bottom in a cascading flow around rows of baffles (racks).

(l) "Tripping off" means that portion of a barge or ship loading operation which occurs within 1.5 meters (5 feet) of the top of the hold.

§ 60.392 Standard for particulate matter.

(a) On and after the sixtieth day of operating at the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial start-up, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any grain dryer any gases which exhibit greater than zero percent opacity (column dryers would be considered in compliance with the standard provided the diameters of all column plate perforations do not exceed 2.1 mm (0.083 inch), and rack dryers would be considered in compliance provided all exhaust gases pass through a 3.53 or finer mesh screen filter).

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility except a grain dryer any gases which:

(1) Exit from a control device and contain particulate matter in excess of 0.023 g/dscm (0.01 gr/dscf);

(2) Exhibit greater than zero percent opacity.

(c) On and after the sixtieth day of operating at the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial start-up, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere any fugitive emission from:

(1) Any truck unloading station, railroad hopper car loading station, railroad boxcar loading station, or grain handling operation which exhibits greater than zero percent opacity.

(2) Any railroad hopper (or railroad) the station or railroad boxcar unloading station which is visible without the aid of instruments.

(3) Any truck loading station which exhibits greater than ten percent opacity.

(4) Any barge or ship loading station which exhibits greater than ten percent opacity, except that the opacity may not exceed fifteen percent during tripping-off operations.

(d) The owner or operator of any barge or ship unloading station shall operate as follows:

(1) The leg shall be enclosed from the top (including the receiving hopper) to the center line of the bottom pulley and ventilation to a control device shall be maintained on both sides of the leg and the grain receiving hopper.

(2) The total rate of air ventilated shall be at least 30 (actual cubic meters per cubic meter of grain handling capacity (or 4 ft³/ft³/hr).

(3) Rather than meet the requirements of subparagraphs (1) and (2), the owner or operator may use other methods of control if demonstrated to the Administrator's satisfaction that there would be less than or equivalent amounts of particulate matter emissions by using the alternative methods.

§ 60.393 Test methods and procedures.

(a) Reference methods in Appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance with the standards prescribed under § 60.392 as follows:

(1) Method 5 or Method 17 for concentration of particulate matter and associated moisture content.

(2) Method 1 for sample and velocity traverses.

(3) Method 2 for velocity and volumetric flow rate.

(4) Method 3 for gas analysis, and

(5) Method 9 for visible emissions.

(b) For Method 5, the sampling probe and filter holder shall be operated without heaters. The sampling time for each run, using Method 5 or Method 17, shall be at least 60 minutes. The minimum sample volume shall be 1.7 std. m³ dry basis (or 60 dscf).

(FR Doc 77-1067 Filed 1-13-77;8:45 am)

FEDERAL REGISTER, VOL. 42, NO. 9—THURSDAY, JANUARY 13, 1977

[40 CFR Part 60]

[FRL 661-4]

GRAIN ELEVATORS

Standards of Performance for New Stationary Sources; Extension of Comment Period

On January 13, 1977, the Environmental Protection Agency (EPA) published a notice of proposed rulemaking under section 111 of the Clean Air Act, as amended (42 FR 2796). The proposed regulation would establish standards of performance for new, modified or reconstructed grain elevators. The comment period for this proposed regulation ends March 14, 1977.

EPA has been requested by the Governor of Kansas to extend the comment period 30 days in order to allow the Kansas Secretary of Health and Environment, representatives of the State's grain industry, and other interested parties additional time to compile, assemble and submit comment. Since it appears that a number of persons would like additional time to submit comments, the comment period is being extended 30 days for all parties who may wish to participate in this rulemaking. All comments postmarked by May 13, 1977 will be considered and should be submitted (in triplicate) to the Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin.

Dated: March 7, 1977.

Roger C. Dower,
Acting Assistant Administrator
for Air and Waste Management.

(FR Doc 77-7067 Filed 3-10-77;8:45 am)

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